Sandhills Publishing

PC TODAY

TECHNOLOGY FOR BUSINESS

November 2011 Vol. 9 Iss. 11 | pctoday.com
Complimentary Copy

THE COST OF SECURITY
Determine What Is Appropriate (P.26)

WIRELESS BOTTLENECKS?
How To Improve Your Network (P.32)

DATA LOSS PREVENTION
Why Planning Is Important (P.28)



SECURITY Alert

Know The Threat Landscape & Prevent Problems Before They Affect Your Business

GREAT WEB HOSTING
THE BEST VALUE
FOR YOUR BUSINESS

✓ **Superior Website Security with 1&1 Dual Hosting:**
Your website is simultaneously hosted in 2 locations in our geo-redundant data centers!

✓ **Unlimited Access**
65 Click & Build Applications.

✓ **Unlimited Support**
24/7 Technical Support.



	1&1®	GoDaddy®	Network Solutions®
Package	Unlimited	Deluxe	Large
Web Space	unlimited	150 GB	500 GB
Traffic	unlimited	unlimited	unlimited
Domains	1 FREE	$11.99 (per year)	1 FREE
Private Domain Registration	FREE!	$9.99 (per year)	$9.99 (per year)
1&1 Dual Hosting	✓	–	–
Monthly Cost	$3.49*	$6.79	$13.29
Annual Cost (incl. domain)	$ 41.88 first year, then $83.88	$103.46	$169.97

YOUR PRIVACY IS IMPORTANT. WE AGREE.

That's why at 1&1, all domains come with FREE Private Domain Registration to protect your name, address, phone number and e-mail from spammers and identity thieves.

1&1®

MEMBER OF united internet

Get started today, call **1-877-461-2631**

www.1and1.com

* $3.49/month offer valid with 12 month minimum contract term only. Upfront payment due upon sign up. Setup fee and other terms and conditions may apply. Private domain registration is available for .com, .net, .org, .info, .biz, .tv, .mobi, .name, .ws, and .cc domains. Visit www.1and1.com for full promotional offer details. Program and pricing specifications and availability subject to change without notice. 1&1 and the 1&1 logo are trademarks of 1&1 Internet, all other trademarks are the property of their respective owners. © 2011 1&1 Internet. All rights reserved.

PC TODAY TECHNOLOGY FOR BUSINESS

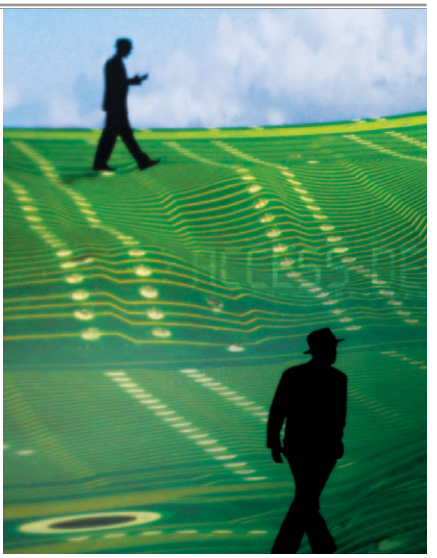
www.pctoday.com

Table Of Contents
Volume 9 • Issue 11 • November 2011

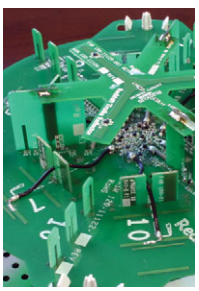
ON THE COVER

Security Alert

Security experts are not crying wolf when they warn about the many ways data thieves can enter networks and pilfer sensitive data. In this issue, we examine the top threats that businesses need to know about right now and identify means of dealing with those threats. Turn to the Essential Business Tech department to find articles about the top security threats, network security innovations, mobile workforce security, cloud security, and business security expenses.

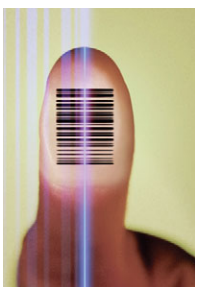


IN THIS ISSUE



10
➤ *Essential Business Tech*

Technology intelligence for executives, professionals, and entrepreneurs



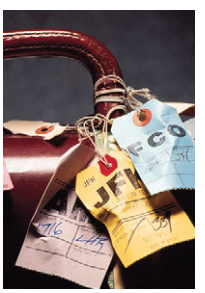
38
➤ *Mobile Office*

Highly useful information for conducting business on the road



64
➤ *Personal Electronics*

Electronics, services, and helpful advice for home and leisure



68
➤ *Business Travel 911*

Fast tech support especially for traveling professionals

Product Coverage Inquiries
products@pctoday.com
(800) 247-4880
131 West Grand Drive
Lincoln, NE 68521

Circulation
(To adjust your bulk order or to request racks.)
marketing@pctoday.com
(800) 334-7458

Customer Service
(For questions about your subscription or to place an order or change an address.)
customer-service@pctoday.com
(800) 733-3809
FAX: (402) 479-2193

PC Today
P.O. Box 82545
Lincoln, NE 68501-5380

Hours
Mon. - Fri.: 8 a.m. to 6 p.m. (CST)
Online Customer Service
& Subscription Center
www.pctoday.com

Authorization For Reprints
(800) 247-4880

Copyright 2011 by Sandhills Publishing Company.

PC Today is a registered trademark of Sandhills Publishing Company. All rights reserved. Reproduction of material appearing in *PC Today* is strictly prohibited without written permission. Printed in the U.S.A. GST # 123482788RT0001 (ISSN 1040-6484).

PC Today is published monthly for $29 per year by Sandhills Publishing Company, 131 West Grand Drive, P.O. Box 85673, Lincoln, NE 68501-5380. Subscriber Services: (800) 733-3809.

POSTMASTER: Send address changes to *PC Today*, P.O. Box 82545, Lincoln, NE 68501

Scan this QR Code with your mobile smartphone to see our Web site.

CLOUDSIGMA TARGETS U.S. MARKET

➤ The Swiss cloud computing company CloudSigma recently introduced its IaaS (infrastructure as a service) offering to the American market, which is arguably already saturated with IaaS solutions from the likes of Amazon and Rackspace. CloudSigma CEO Patrick Baillie indicated that the company will be successful in this new market because of the flexibility CloudSigma offers. In a statement, Baillie said CloudSigma "[lets] companies pick and choose the exact resources necessary to support their business requirements," ultimately giving customers "control over their data, billing, and resources."

ORACLE LAUNCHES BIG DATA APPLIANCE

➤ Aimed squarely at enterprise businesses and large organizations, especially those that already use Oracle Database 11g, Oracle Exadata Database Machine, and Oracle Exalytics Business Intelligence Machine, the new Oracle Big Data Appliance collects massive amounts of data and feeds them to the database and BI applications. Oracle Big Data Appliance is essentially a workhorse of a solution, collecting input data from such things as smart meters and sensors, as well as Web content and other types of data that aren't already pulled in to existing systems, and makes them available for organization and analysis.

SYMANTEC INTRODUCES NEW SECURITY PLATFORM

➤ Symantec recently introduced Symantec O_3, designed primarily to serve enterprise businesses using cloud-based applications and infrastructure. In addition to providing essential encryption and DLP (data loss prevention) technologies for data being sent into the cloud, the platform also focuses on SSO (single sign-on) controls for businesses using Active Directory and similar solutions. SSO takes the multiple logins associated with using a variety of cloud services and applications and reduces them to a single login, thereby simplifying the user experience.

SPRINT SPEEDS UP 4G ROLLOUT

➤ In December 2010, Sprint announced Network Vision, a game plan for combining its network technologies into one network and rolling out 4G LTE (Long Term Evolution) service across the United States. Following that plan, Sprint would have completed its LTE rollout in 2015. In October, however, Sprint revised its plan and now expects to launch LTE in mid-2012 and complete the rollout by the end of 2013.

CA UPDATES VIRTUAL ENVIRONMENT CONTROL SOLUTION

➤ A growing number of organizations are adopting virtualization solutions, but fully securing virtual environments is sometimes overlooked. CA has updated its CA Access Control for Virtual Environments (formerly called CA Virtual Privilege Manager) to address security concerns specific to virtual environments. The solution gives IT personnel the ability to monitor and control user access (including isolating specific virtual machines) in order to avert mistakes and security threats alike. It also helps customers meet virtual data center compliance requirements.

ADOBE PUSHES CREATIVITY INTO THE CLOUD

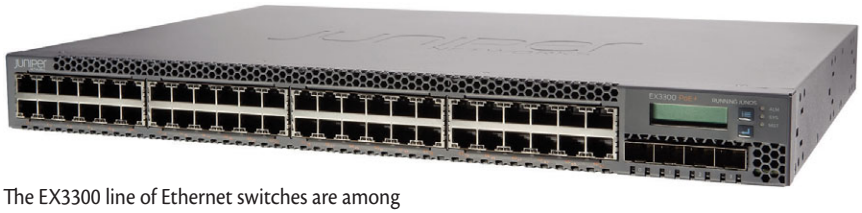
➤ Adobe, the company behind many widely used content creation and desktop publishing applications, is now helping content creators and developers get into the cloud with its Adobe Creative Cloud product. Launched and promoted in conjunction with Touch Apps (for tablet software developers), Adobe Creative Cloud is billed as "the hub for viewing, sharing, and syncing of files created by Adobe Touch Apps and Adobe Creative Suite." According to a press release, by "early 2012," Adobe Creative Cloud will bring into the mix other popular Adobe desktop applications, including Photoshop, Illustrator, InDesign, Dreamweaver, Adobe Digital Publishing Suite, and Business Catalyst.



"The move to the Creative Cloud is a major component in the transformation of Adobe," says Adobe CTO Kevin Lynch.

JUNIPER INTRODUCES NEW PRODUCTS TO LEVERAGE MOBILITY

➤ Going mobile can be a complicated business. Juniper Networks wants to make it easier not just to establish wireless networks for an increasingly mobile workforce, but also to secure and administer those networks. To that end, Juniper announced its new Simply Connected portfolio in September, which includes numerous products that are now available: EX6200 Ethernet switches for high port densities in limited space, EX3300 Ethernet switches with Virtual Chassis technology for high flexibility in a single device, EX2200-C Ethernet switches for conference rooms and similar areas, the WLC880 Wireless LAN Controller for medium- to large-sized wireless installations, and the Junos Pulse Mobile Security Suite.



The EX3300 line of Ethernet switches are among the new collection of Juniper Networks products in the Simply Connected portfolio.

NUANCE COMMUNICATIONS ACQUIRES SWYPE

➤ Although no formal announcement has been made by Nuance Communications or Swype, small boxes on each company's Web site indicate that Nuance has acquired Swype. An SEC filing puts the total selling price at $102.5 million. Nuance is the company behind the Dragon voice-to-text software, including the popular mobile app of the same name. Swype holds patents for a technology that lets users interact with device touchscreens using a fingertip or stylus to quickly enter text and commands.

IMATION RELEASES SCALABLE STORAGE FOR SMBS

➤ Small- to medium-sized businesses aren't typically static for long. To address the changing needs of SMBs, Imation has introduced a scalable storage platform that adds new InfiniVault and DataGuard appliances and includes the existing RDX removable storage and LTO (Linear Tape-Open) technologies. The result is a portfolio that provides SMBs with a la carte storage options, giving businesses the ability to add storage and data archiving capabilities as needed. There are specific benefits, as well, in the areas of unstructured data storage and disaster-tolerant backup with InfiniVault and DataGuard, respectively.

NEW IPHONE TO BE A BIG SELLER

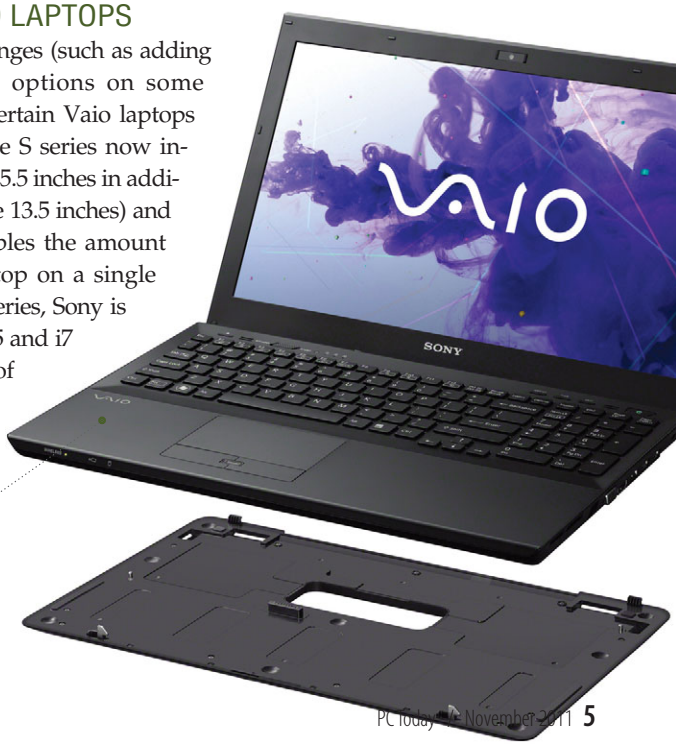
➤ Apple reported that preorders for its newly announced iPhone 4S reached more than 1 million in a single day, breaking the company's previous records. Now available through various carriers in the U.S., the iPhone 4S includes a dual-core A5 processor, an 8MP camera capable of capturing HD video, and a voice-based assistant called Siri (say what you want to do with your iPhone, and Siri will take care of it, according to Apple). The big show-stealers, however, are the new iPhone's operating system (iOS 5) and iCloud; among many other noteworthy features, the two work together to make sure all of your iPhone's data is backed up to Apple's cloud servers at no additional charge.

GOOGLE OPENS CLOUD STORAGE TO DEVELOPERS

➤ Google is aiming at the enterprise data storage market with its relaunched Google Cloud Storage. Formerly called Google Cloud Storage For Developers, the service is now in wider availability, although the development crowd remains the target audience. The service competes with Amazon's S3 (Simple Storage Service) and will likely propel Google's Web dominance further into the business market. Google is offering a free trial version of the service through the end of this year.

SONY REFRESHES VAIO LAPTOPS

➤ In addition to cosmetic changes (such as adding red and black to the color options on some models), Sony has updated certain Vaio laptops with noteworthy features. The S series now includes a larger screen option (15.5 inches in addition to the previously available 13.5 inches) and an optional battery that doubles the amount of time you can use the laptop on a single charge. And, in the C and E series, Sony is now using Intel's latest Core i5 and i7 processors, respectively. All of the new models are available now as part of a pre-holidays launch.



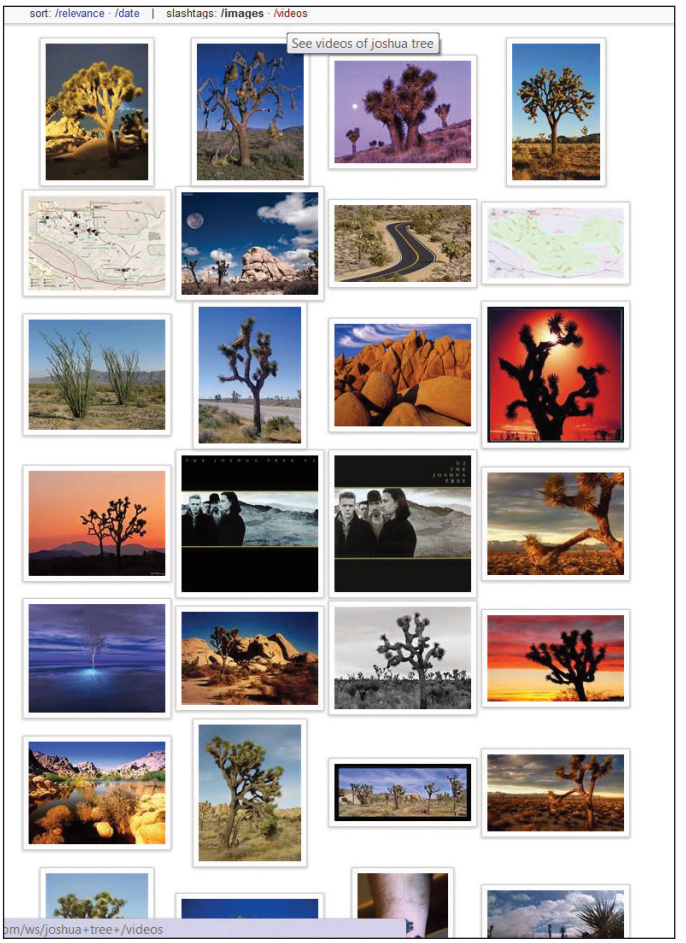
With its extended sheet battery, the refreshed Sony Vaio S series laptop gets roughly twice the battery life per charge.

GOOGLE SETS UP SHOP IN TECH CITY

➤ The 4 mile-long area dubbed "Tech City" and "Silicon Roundabout" in East London that's part of an initiative Great Britain Prime Minister David Cameron is championing to stimulate the UK economy got a big boost in late September. That is when Google announced it is entering a long-term lease valued at roughly $8 million over 10 years for a building in the area. The seven-story building will house technology entrepreneurs, engineers, developers, and others related to startups. The building is expected to open for business in 2012 following a refurbishing effort by Google. David Singleton, Google UK engineering director, stated that, "East London is already home to hundreds of innovative British startups and has huge potential for economic growth and new jobs over the coming years." Google already has an office presence in central London. Tech City, meanwhile, reportedly has about 300 companies operating in the area. In addition to offering office space, Google will use the building to host product demos, "hackathons," and training programs.

YAMMER RAISES MILLIONS FOR ENTERPRISE SOCIAL NETWORK BIZ

➤ Yammer (www.yammer.com), a provider of private, secured social networks for businesses and their employees, recently raised $17 million in investments. Former Facebook executive Chamath Palihapitiya led the investment effort via his Social+Capital Partnership fund. Charles Rivers Ventures, Emergence Capital, and U.S. Ventures Partners, all of which have previously invested in Yammer, also took part in the latest investment round. Yammer claims that more than 100,000 companies, 3 million-plus users, and more than 80% of the Fortune 500 use its networking features globally. To date, the company has raised $57 million since it was founded three years ago. Former PayPal COO David Sacks founded the company and serves as its CEO. Notable Yammer board members include Sean Parker, co-founder of Napster and Plaxo and founding president of Facebook.



SEARCH ENGINE BLEKKO TOTALS $30 MILLION IN NEW INVESTMENTS

➤ Blekko (www.blekko.com), a search engine that was founded about a year ago, has now raised $55 million in funding following a recent effort that brought in $30 million in funds. That most recent funding round was highlighted by the $15 million participation of Russia's most popular search engine Yandex. The other investors participating included the Australian-based MLC Private Equity, U.S. Venture Partners, CMEA Capital, and PivotNorth Capital. Among the various search features that Blekko offers users is the ability to conduct searches using slashtags so that the results that Blekko returns don't include spam Web sites. Reportedly, Yandex's funding in the company represents the first time that it has invested in a U.S.-based search service.

ONLINE STORAGE & SYNCING PROVIDER BOX.NET RAISES $50 MILLION

➤ Palo Alto-based Box.net, a provider of secured cloud computing-based file and media storage, sharing, and synchronization tools that are aimed at enterprises, recently raised more than $50 million from various investors as part of a new funding round. The company, which recently announced new syncing support for files across PC and Mac platforms, was founded in 2005. CEO Aaron Levie recently stated that the company counts 7 million users and 100,000 businesses among Box .net users, as well as 77% of the Fortune 500. Other notable features of Box.net include mobile access via apps (Android, BlackBerry, and iOS support) and online workspace, collaboration, search, and real-time editing capabilities.

There's a better, more secure way to remember passwords!



Recent research shows that most employees have to remember over 8 different user names and passwords.

This is **inefficient** and results in more calls to **the helpdesk**. This also creates a **security risk** because passwords are often written down on Post-its®.

Single Sign On (SSO) software can securely remember passwords for each employee!

Want to know more?

Take a look at www.tools4ever.com/sso/

tools4ever

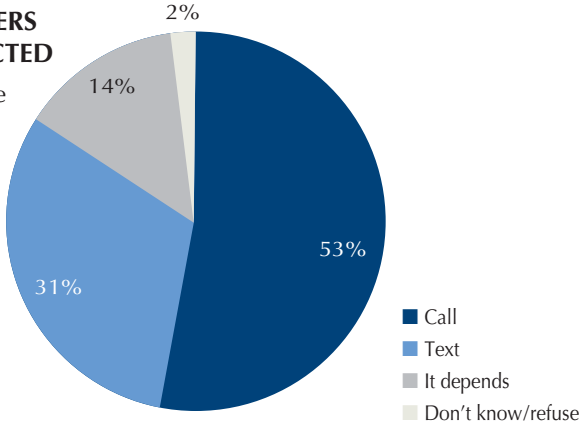
Experts in Identity & Access Management.

ADULTS PREFER VOICE CALLS OVER TEXT MESSAGES

➤ According to the Pew Research Center, 83% of adults in the U.S. own cell phones and 73% send and receive text messages. A survey of those using text messaging revealed that 31% preferred texts to talking on the phone, while 53% said they preferred a voice call to a text message. Another 14% said the contact method they prefer depends on the situation. Adults in the 18- to 24-year-old age range were the most frequent texters by a large margin. They exchanged an average of 109.5 messages on a normal day or more than 3,200 texts per month.

➤➤ HOW CELL OWNERS PREFER TO BE CONTACTED

Based On Adult Cell Phone Owners Who Use Text Messaging



SOURCE: THE PEW RESEARCH CENTER

MORE ORGANIZATIONS CONSIDERING MANAGED PRINT SERVICES

➤ Managed print services—including support, service, assessment, and supplies—are becoming more popular, according to IT trade association CompTIA. Even though 20% of the firms surveyed by CompTIA said becoming paperless is a priority, printing still occurs daily at nearly 75% of offices. Approximately 50% of large firms (more than 500 employees) reported using a managed print service in some capacity, compared to 20% for small firms (fewer than 100 employees). Of those companies not currently using managed print services, 35% expect to definitely or probably consider adoption over the next 12 months. The most important benefits reported for managed print services were lower total cost of ownership and more consistent and reliable print and document management.

NUMBER OF MOBILE SOCIAL NETWORKING USERS FORECAST TO TRIPLE BY 2016

➤ ABI Research predicts that the number of people accessing social networks from mobile phones will exceed 550 million in 2011, and that figure will more than triple to more than 1.7 billion by the end of 2016. Recent moves by Google and Apple illustrate the relationship of social networks and mobile phones. Google's social networking service Google+ is deeply integrated with Android, and Apple's iOS 5 operating system is integrated with Twitter. For Facebook, mobile access allows engagement with new consumers, but the current mobile apps platform prevents direct integration with the social networking site. ABI analysts predict Facebook will move to HTML5 for mobile access and recommend adopting its own operating system in the long term.

SURVEY FINDS BUSINESS RISK FROM LACK OF SMARTPHONE SECURITY

➤ A survey of smartphone and tablet users recently conducted by Confident Technologies found that most respondents do not password protect their mobile devices, despite keeping them logged in to sensitive online accounts and applications. In addition, nearly 90% of respondents reported that their smartphones and tablets are personal devices not provided by their employer, but more than 65% reported that they use their mobile devices to access work email or the company network. Additionally, the survey revealed that a majority of respondents leave mobile applications such as email, shopping apps, and social networking accounts continuously logged in.

REPORT REVEALS IMPORTANCE OF INTERNET AND MOBILE DEVICES FOR FUTURE WORKERS

➤ The 2011 Cisco World Technology Report, based on surveys of college students and professionals under the age of 30 in 14 countries, underscores the importance of new technologies and mobile devices to the current and future workforce. Two-thirds of students (66%) and more than half of employees (58%) cite a mobile device (laptop, smartphone, tablet) as "the most important technology in their lives." Smartphones are closing in on desktops as the most prevalent tool, as 19% of college students consider smartphones as their most important device used on a daily basis, compared to 20% for desktops.

➤➤ MOST IMPORTANT TECHNOLOGY IN DAILY LIFE

Technology	% College Students	% Employees
Laptop	46	37
Desktop	20	25
Smartphone	19	19
TV	6	8
Newspapers, magazines, books (not online)	4	4
Radio	1	2
Tablet	1	2

SOURCE: 2011 CISCO WORLD TECHNOLOGY REPORT

laplink
connect your world

PCmover®

The Easiest Way to Setup a New PC



The ONLY software that moves programs, files and settings to your new PC!

PCmover Features:

- Easy-to-Use Interface
- Select Only What You Want to Transfer
- Set It and Forget It Functionality
- Hassle Free "Undo" Feature
- Automatic Application Installation
- Save up to $300 Per PC

No longer worry about manually transferring files and folders, finding old CDs, serial numbers or reinstalling all of your applications one by one because PCmover handles everything automatically.

The functionality, personality, look and feel of your old PC is automatically moved to your new PC, with little effort. This makes getting used to a new PC and operating system simple and hassle free.

Learn more about how easy it is to move into a new PC:
laplink.com/PCmoverFreeNov2011

Try PCmover FREE

Use a QR Code Scanner App

© Copyright 2011 Laplink Software, Inc. All rights reserved.

Security Alert

TOP THREATS YOU NEED TO KNOW ABOUT

Security experts are not crying wolf when they warn about the many ways data thieves can enter networks and pilfer sensitive data.

Recent headlines about how Anonymous, Stuxnet, and other highly sophisticated attacks collectively compromised hundreds of millions of dollars' worth of sensitive data or shut down otherwise highly guarded servers have helped to drive home the risks enterprises face. But, unfortunately, such high-level incidents are the tip of the iceberg compared to the multitude of attacks that regularly hit lesser-known targets or that go unreported.

Despite the huge security risks that computer attacks represent, too many enterprises look at IT security budgets as another cost center. Instead of trying to determine how much protection an enterprise needs, those who hold the purse strings instead often try to negotiate

Key Points

- Media warnings about the digital security threats facing today's businesses are far more reality than hype.
- Malicious hacking has become a well-organized business with a thriving black market.
- Understanding the most pervasive threats out there is one key to preventing any harm to your systems.
- The second key to prevention is communication; spreading the word about best security practices goes a long way.

reductions in what the IT department says it requires.

Non-IT executives are not expected to roll up their sleeves and begin setting up security defenses and monitoring for attacks themselves. However, it's a good idea for them to have a general understanding of what the threat landscape is like, the kind of protection that needs to be in place, and what the IT department is talking about when they report an intrusion. Most importantly, they need to know specifics about how security investments are spent and to at least be able to discern whether or not the bases are covered with the budgets that are available.

"The executive or CEO is not exactly going to get elbow deep in security, but just being aware goes a long way," John Grady, a research analyst for IDC (www.idc.com), says.

But before you can gauge how well the IT department is spending money on security, you need to know your enemy. This means understanding the nature of today's attacks and what to watch out for. Here is a non-comprehensive list of the major kinds of threats that put your enterprise's data at risk today and what the IT managers should be doing to prevent them.

SQL INJECTION RAGES ON

SQL injection attacks are a very big deal, and they will continue into the foreseeable future. In fact, they represent one of the most common threats out of all data attacks, according to Imperva (www.imperva.com).

SQL injection attacks are so popular because they are relatively easy to pull off. An attacker merely has to enter a script, for example, in the data entry portion of a vulnerable Web site, which the server recognizes as code without having to enter a password. Such code is not very difficult to find on forums and can be purchased from vendors online.

These attacks also have a high success rate because intrusion detection systems and network firewalls are usually ill-equipped to detect them, says Rob Rachwald, director of security strategy for Imperva. "People are looking at old methods to protect their data from SQL injection attacks. But relying on network firewalls and antivirus are insufficient," Rachwald says. "While over 90% of all attacks involve SQL injection and are focused on data thefts, 80% of security budgets are spent on antivirus and firewalls that do not stop these attacks."

The best way to protect servers against SQL injection attacks is to use application instead of network firewalls for protection, Rachwald says. "[Enterprises] are still not using the right types of firewalls to protect against SQL injection attacks, which is a very bad idea," Rachwald says.



James Quin,
analyst, Info-Tech Research Group

"Think of the typical malware infestation. Sure, the code is written externally and delivered from the outside, but it generally requires an insider to execute it to complete the attack. If there is no insider, there is no threat whether the insider was trying to breach security or not."

HACKING MEETS BIG BUSINESS

Data thieves are not only growing in number; they are also becoming more skilled. Not that long ago, the biggest threats to data vaults included socially awkward individuals who hacked their way past security layers and then bragged about what they did on forums. Sure, data thieves have stolen credit card numbers since the early days of the Web. But today, the business of data theft has emerged as a large industry with more lethal SQL injection scripts, phishing schemes, and other malware on sale for those whose intent is to penetrate networks and steal data to make money.

"Hacking is becoming more commoditized," John Kindervag, analyst for Forrester Research (www.forrester.com), says. "You can rent out a botnet and buy a tool kit to create custom malware that is invisible to anti-malware technologies."

Those responsible for security should be aware of the level of organization behind today's attacks. If sensitive data is not monitored more aggressively than in years past, then whoever is responsible is too complacent.

Also, when someone has managed to bypass the network's security walls and has transferred terabytes of sensitive data to an unknown IP address in Russia, then admins must know what to do. A plan must be in place to take appropriate action when breaches occur, such as being able to report a data compromise in a way that meets today's compliance mandates.

THE PRICE OF MOBILE FREEDOM

Business users are increasingly able to run mobile versions of CRM, spreadsheets, and email PC applications on their smartphones. But this new freedom of mobility comes at a price because sensitive data exchanged and stored on smartphones has become an attractive target for data thieves as the number of the devices in use continues to rise.

More malware, for example, now targets mobile browsers on iPhones, BlackBerrys, and Android devices. "Typically, hackers like to go after broader attacks instead of onesy-twosy attacks," Rachwald says.

Intruders can write or buy scripts that fake users' identities and allow them to gain access to voice mail, email, and text messages. The hacking technique was behind the *News of the World* British tabloid scandal, which the newspaper used to access voice mail and text messages of murder victims.

Mobile data will be increasingly under attack and will become at least

as vulnerable as server room and PC data that is stored behind network firewalls. Mobile data will therefore need to be monitored as diligently as PC networks are. "Joe the sales rep should be blocked from downloading 50,000 contacts whether he's doing it from a PC or an iPhone," Rachwald says. "Likewise, if Fred from marketing is accessing financial information from an iPhone or a PC, we know that's wrong and it should be blocked."

INSIDER THREATS

When employees create security holes in the network, it is often because they forget about policy. They may, for instance, inadvertently fall for a phishing scam or use a USB drive containing a keylogger. "It is very, very true that a lot of insider threats are not usually intently malicious," Rachwald says.

Still, successful attacks often require actions from both an outsider and an insider, says James Quin, an analyst for Info-Tech Research Group (www.infotech.com). "Think of the typical malware infestation. Sure, the code is written externally and delivered from the outside, but it generally requires an insider to execute it to complete the attack," Quin says. "If there is no insider, there is no threat, whether the insider was trying to breach security or not."

Then there are the malicious inside jobs, such as when someone pays, or to be more specific, out-and-out bribes an employee in exchange for illicit access to the network. Large companies will list the number of bribery-related attacks, Kindervag says, which underscores how bribery is on the rise. "They are emerging as common attacks," Kindervag says, "and as far as internal attacks go, bribery is becoming something to worry about."

The best defense that can be put into place is stepping up internal communications about security policies so users can better self-police their behavior. Also, the risk of malicious attacks that someone on the inside might make underscores the necessity of vigilant monitoring and the need for authentication controls, different types of firewall appliances, and alert systems to be in place.

MALWARE ON STEROIDS

The quantity of malware unleashed on the Internet is exploding. According to Panda Security (www.pandasecurity.com), the number of strains of malware skyrocketed from 14 million in 2008 to 60 million by 2010. The malicious code is also becoming much more sophisticated and new variations increasingly go undetected by antivirus software or firewalls. "Malware that gets past your traditional controls has become a much bigger threat," Kindervag says.

While there has been much speculation about the origin of Stuxnet, which mainly targeted networks in Iran, the powerful Trojan horse virus demonstrates just how sophisticated malware code can be. Unfortunately, Stuxnet's code will also likely be transformed into many other Trojan variants.

"The average hacker absolutely couldn't possibly craft Stuxnet on his own," Kindervag says. This is one of the reasons why governments are suspected to have created the Trojan. "Malware has become extremely sophisticated today," adds Kindervag. Phishing attacks, whereby malware is spread through botnets and spam messages, are also becoming more sophisticated.

Users inside the firewall are often responsible for triggering the spread of malware on the network when they open the wrong file or links. However, as described above, most users do not intentionally infect networks with malware, which can be avoided when they are better educated about policies and how malware spreads.

CIRCLE THE WAGONS

Trying to protect an enterprise from every conceivable threat is like attempting to plug a bunch of holes in a dike at once. While high-end intrusion detection systems, firewalls, and VPN tunnels certainly help, most networks, regardless of how locked down they may be, can be comprised by a simple SQL injection attack.

The hard truth remains that the bad guys will likely penetrate the network if they really want to, yet targeted attacks are uncommon, Quin says. "The goal of every business should not be to prevent all attacks, since that is unachievable. Instead, the goal should be to develop enough security that make it easier for someone to attack the next guy instead." Quin adds that enterprises "need to know what the baseline capabilities required for good security are, which include strong anti-malware, a secure perimeter, good policy, comprehensive user training, and some form of oversight."



John Grady,
research analyst, IDC

"The executive or CEO is not exactly going to get elbow deep in security, but just being aware goes a long way."



Rob Rachwald,
director of security strategy, Imperva

"People are looking at old methods to protect their data from SQL injection attacks. But relying on network firewalls and antivirus are insufficient."



John Kindervag,
analyst, Forrester Research

"The average hacker absolutely couldn't possibly craft Stuxnet on his own. Malware has become extremely sophisticated today."

PROCESSOR®

IT and data center technologies and trends change fast.

Make sure your company stays a step ahead with *PC Today's* sister publication, *Processor*. While you get the "executive overview" version here in *PC Today*, your IT and data center managers get the in-depth, detailed information they need in *Processor*.

Each issue contains

- In-depth information about new products and the companies providing them
- No-nonsense articles that cover the technologies and trends you need to know
- Tips, advice, and how-to information to improve your enterprise data center



September 9, 2011
Volume 33 Number 18
www.processor.com

PROCESSOR
Products, News & Information Data Centers Can Trust. Since 1979

A Cabinet For Every Need

Rackmount Solutions Is In The Business Of Cabinet Innovation

RACKMOUNT SOLUTIONS, LTD
where customer service matters

Air Conditioned Server Cabinet

For Niche Markets

Development Over Commission

UCoustic 9210 Soundproof Rackmount Cabinets

(800) 819-9014 | www.Processor.com

Network Security Evolves

How Recent Security Innovations Are Transforming Networks



The corporate network has quickly become a breeding ground for exploits and malware that target weaknesses and deliver unauthorized access to sensitive information.

As a perpetually evolving entity in every organization, the network requires constant innovation to keep pace with continually evolving threats, including even state-sponsored attacks from sources that boast nearly limitless resources.

As the network now represents a crucial piece of the enterprise puzzle, hackers have ramped up their own innovation levels when it comes to extracting information from networks. James McMurry, chief executive officer of Milton Security Group (www.miltonsecurity.com), says that a few years ago, most organizations would consider their networks secure because they used Active Directory, which provided an authentication mechanism prior to giving access to network resources. Likewise, the simple existence of a firewall helped to boost confidence that the network was secure.

"Both of those beliefs, however, are very inaccurate," McMurry says. "Since then, we have seen a rise of botnets, spearfishing, malware, etc. Secure has evolved—in some cases a little too slowly, [while] in others, a deluge of acronyms and buzzwords far outpaced the actual threats. Over the past few years, the actual network systems have become more intelligent."

McMurry says a recent trend gives businesses the ability to allow non-corporately owned devices (including mobile devices) to be used on a corporate network while allowing those businesses to manage device usage and keep corporate assets secure. For example, an inline adaptive endpoint security system can let IT groups grant (or restrict) access to devices and ensure the data integrity of the corporate assets and environment.

Key Points

- Privilege-based network access helps organizations ensure that critical data is accessed only by authorized individuals.
- Rather than looking at external threats, data loss prevention examines data leaving the corporate network to prevent sensitive data from falling in the wrong hands.
- Cutting-edge appliances can capture data on critical network pathways to identify and analyze not only ongoing issues, but also problems that occurred in the past.
- Innovations are also appearing in network strategies, including holistic approaches that keep both the network and business in mind.

Privilege-based network access has also risen in popularity over recent years. According to Hemanshu Nigam, founder and chief executive officer of SSP Blue (www.sspblue.com), this technology increasingly restricts access as someone gets closer to a company's most valuable access, similar to security in a bank, where security controls increase and access privileges decrease as someone gets closer to the bank's vault. For another example of how this technology works, consider household networks, where a consumer configures one administrator account with separate family member accounts that have limited privileges.

Recent years have also witnessed a gradual move away from signature based defenses, in which certain behaviors are labeled as malicious, and toward anomaly detection, says Alex Holden, director of enterprise security for Cyopsis (www.cyopsis.com). "Companies are trying to understand trends in behaviors of their users and data flows. At the same time, there is an increased interest in activities of the users themselves vs. external hackers. After all, many major breaches of security have their unwitting human component, which usually resides inside the breached networks," Holden says.

UP & COMING

Today's networks bear little resemblance to those of yesteryear when it comes to security. Sure, you'll still find standard antivirus and firewall technologies, but cutting-edge innovations are starting to take hold and show real promise as mainstays of the future. According to Holden, such innovations aren't always easy to implement, but they can certainly provide enhanced protection against increasingly sophisticated attacks.

One such innovation is DLP (data loss prevention), which bucks the traditional trend of identifying and preventing external threats in favor of identifying sensitive data leaving corporate networks. Holden notes that internal users represent the highest security risk to organizations, and not necessarily because they're disgruntled or even negligent—rather, because they simply might not be sufficiently vigilant.

"How many times have we heard a story of a diligent employee taking work home and something unforeseen, like a virus, thieves corporate data from the employee's personal PC? To the end users, technology is supposed to be simple. It is supposed to be a tool and a friend," Holden says.

However, user friendliness doesn't always go hand-in-hand with security on an enterprise network, where data loss can prove costly. Holden notes that DLP systems act as guard dogs of the network by monitoring the flow of sensitive data traffic and ensuring that it doesn't leave its designated safe area. This technology covers not only the corporate network, but also individual user systems and servers.

Another recent innovation that's relatively rare but stands to garner more acceptance in the near future is the full network data capture appliance. "They are all-seeing eyes that never sleep and capture all the network traffic on the most critical pathways," Holden explains. "These devices are not only used to analyze ongoing issues that they see, but they also possess the ability to go back in time—if the incident already occurred—and provide the most accurate account of events that transpired, allowing for loss and remediation analysis."

TRANSFORMING THE STANDBYS

Although cutting-edge appliances and other technologies are helping to transform network security, innovations continue to boost the security of conventional security tools, such as antivirus and firewalls. Some of these innovations spawned partially from the need for antivirus and firewalls to mesh with basic network access. Nigam notes that years ago, business travelers would be forced to disable their security software to access the Internet from hotels, but today's software is far more intuitive and can remain enabled in such situations.

"Application firewalls evolved greatly over the years and now provide full protection against unauthorized access and tampering on the highest layer available—the data layer," Holden says. "Historically, firewalls were mostly used to allow or prohibit communications between several systems or groups of systems for a specific application. Now, the controls are significantly more granular and precise."

For example, Holden explains that access controls can be tuned to

➤➤ MORE INNOVATIONS

As technologies that improve the performance and access of networks continue to appear, so do innovations that help to secure those networks. Here's a look at more innovations making the rounds at today's organizations.

Digital fingerprinting. Devices are placed on banned device lists to prevent attackers from repeatedly using a device with known weaknesses.

High-speed packet capture. These systems capture and analyze packets at high speeds to enable quick identification of potential threats.

Cloud monitoring. Security monitoring solutions in the cloud help organizations offload network-intensive monitoring tasks that are critical to ensuring networks remain safe.

Free toolsets. Free, powerful toolsets are used by organizations to test their systems and ensure their network infrastructure is secure. Of course, these same toolsets can be used by attackers to penetrate systems.

regulate a single component within an application, track user activities to identify anomalous behaviors, and identify and stop ongoing threats through complex quantitative analysis. McMurry adds that recent innovations have also led to technologies that not only allow organizations to identify and control applications they want to allow to reach their network from the outside, but also control applications from the inside.

According to McMurry, antivirus technology has not seen radical changes in "quite some time," as signatures and pattern matching remain as common components of antivirus products. However, Holden points out that 20 years ago, antivirus protection was a luxury afforded to only the most critical systems, but now every organization has access to advanced antivirus systems that are self-aware and can defend themselves. This is crucial, he says, because malware writers create viruses that disable the protection layer first to enable deeper penetration into networks.

these require organizations to proactively deal with threat-related policies and procedures."

These and other changes—including far-reaching, state-sponsored attacks—have triggered the need to innovate the approach to network security, rather than just adopt innovative technologies. Nigam says that network security discussions are now happening more often at the C-level, where security becomes part of the business strategy instead of a simple budget-line item.

"C-level discussions have forced security groups to think of security holistically, where organizations are taking the time to analyze their assets, determine their value, and place pervasive security around it. Organizations are also beginning to test their solutions by using external vendors who provide white-hat security assessments before the black hats expose any vulnerabilities," Nigam says.

> Clicking links in emails from people you don't know is never a good thing.

In fact, Nigam adds, this holistic approach created by the alignment of security with business has had a greater impact on security than any single network security innovation. And while holistic network security is bound to increase in coming years, experts are quick to stress that networks will still be vulnerable to the weakest link—which might just be employees sitting at their desks.

"Administrative assistants, managers, vice presidents, and the top executive staff—each one of them has to under the need to be ever-vigilant," McMurry says. "Clicking on links in emails from people you don't know is never a good thing. Likewise, telling someone your user ID and password just because they claim to work at the help desk is not a good thing. For all of the innovations out there, the main link in this is the end user sitting at the workstation."

STRATEGY INNOVATION

Concerns around network security are shared by all organizations, but some have a greater stake in the realm than others, which in turn prompts the need for more stringent technologies. Brad Johnson, vice president of SystemExperts (www.systemexperts.com), says many organizations are now audited either formally (through certification) or informally (for example, through third-party requests).

"Many of these audits are under the guidance of standards such as PCI, ISO 27002, HIPAA, Sarbanes-Oxley, or state-related compliance laws," Johnson says. "Standards like



Alex Holden,
director of enterprise security, Cyopsis

"Firewalls are no longer only devices protecting the enterprise network from the Internet—they are used everywhere to segregate and filter data on all logical layers and systems."



James McMurry,
chief executive officer, Milton Security Group

"Security in the 21st century has to always be one step ahead of the bad guys. It is a difficult task to undertake for sure, as [attackers] only need to be good one time, using that one unknown and newly crafted zero-day."



Hemanshu Nigam,
founder and chief executive officer, SSP Blue

"The evolution in the place security has in an organization is leading to increased innovation in security services and products looking to capitalize on this opportunity."



Brad Johnson,
vice president, SystemExperts

"Vendors understand that there is a market for providing infrastructure that helps companies deal with exploits and exploit attempts."

Keep Your Documents & Technology Safe

How Best Buy For Business™ Protects Your Data & Investments

Best Buy For Business offers a variety of ways to help you keep your organization's documents and technology safe. To help get a better idea of what the different options are, we talked with Joe Weiss, Account Manager at Best Buy For Business, about how Account Managers and Geek Squad® Agents will work to protect your company.

Can you tell us what the role of a BBFB Account Manager and Geek Squad Agent are within Best Buy as a whole?

Weiss: The Best Buy For Business Account Manager is set up to be the trusted adviser, or business consultant, for small- to medium-sized businesses. Account Managers have extensive backgrounds in complex IP solutions, as well as building a product selection for the customer. The Geek Squad Agent is assigned to work with the Account Manager; not just in building the solution, but also in fulfilling it. Geek Squad Agents are out there to help support the customer 24/7 for remote service, as well as on-site and in store. The Account Manager is there to best fill the solution for the customer.

What are some of the services BBFB offers to help companies secure their data and products?

Weiss: We're partnered with Trend Micro, which is a huge company



in the security space. In particular, Trend Micro has made advancements in cloud storage backup and security. There's a tool from Trend Micro called SafeSync that allows you to store, encrypt, and protect your documents online, as well as access them from any Internet-connected PC or iOS or Android device. We have had great success with it, because it's fast—and maybe most importantly, because it's cost effective for our business customers. We also offer local storage solutions, which include server or network attached storage with redundancy. From a security and safety standpoint, Best Buy For Business also offers encryption software from a variety of providers.

What services can a Geek Squad Agent offer to safeguard purchased equipment?

Weiss: Whether the customer goes with a SafeSync solution or a local storage solution, the Geek Squad Agent can fulfill any of those services for the customer. If the client wants the files or documents in a cloud-based environment, the Agent will set that up. If they need to have the files locally stored, the Agent can set up network-area storage for them.

What are some of the services BBFB offers to help companies secure their data and products?

Weiss: Best Buy For Business Account Managers are some of the most highly trained employees at Best Buy. They receive training from just about every vendor Best Buy carries. Account Managers are trained in a variety of different solutions, so they'll ask the right questions to identify the needs of the customers. You'll be receiving advice from a subject matter expert: one who has the most knowledge Best Buy has to offer its business customers.

On a final note, how do you recommend companies get started using BBFB services?

Weiss: Best Buy For Business is easily accessible. Customers can go into any Best Buy store or call 1-888-838-4287 to get started with an Account Manager. Best Buy has more than 1000 stores across the country, so help might be just around the corner.

BEST BUY, the BEST BUY logo, the tag design, BEST BUY FOR BUSINESS, the BEST BUY FOR BUSINESS logo and GEEK SQUAD are trademarks of BBY Solutions, Inc. © 2011 BBY Solutions, Inc. All Rights Reserved.



Expansion Protection

Securing A Growing Workforce Requires A Comprehensive Strategy

For any company, employee expansion typically presents new opportunities for revenue and industry recognition. But a growing workforce also equates to more points of attack for hackers looking to steal a company's information or other digital assets. Along with these increased potential attack points, expanding companies also tend to deploy new technologies that can create additional security hazards.

"As a business' workforce increases and as it grows increasingly mobile,

Key Points

- An increased number of employees generally means a larger number of attack points, particularly as new technologies and methods of access are introduced to a business environment.
- As a workforce expands, mobile workers tend to grow in number and force IT to re-evaluate their security strategies to prevent data leakage from mobile devices.
- Data storage becomes a big concern as an employee base grows because poor password and encryption management on cloud backup services and elsewhere can lead to leakage and breaches.
- Examining the security infrastructure and practices before expansion occurs is critical to ensuring security remains tight when more employees are eventually hired.

its security-related challenges increase and ultimately become more mobile," says Guy Hembroff, associate professor and chair of the Computer Network and System Administration program at Michigan Technological University (www.mtu.edu). "Simply, there are more targets to attack, and because of their mobility, many of the targets are no longer behind the security fortress inside their network."

The challenge, he explains, becomes securing devices in unknown environments and preventing sensitive data from being viewed, removed, or transferred without proper authorization. This can be a weighty set of responsibilities even when a workforce remains static in number, but add in the prospect of new hires, and IT will quickly have its hands full.

MOBILE CONCERNS

As the number of employees increases in a business, IT systems are typically expanded in parallel to accommodate the larger pool. Although the system architecture might not have any problems with the expansion, the increased complexity can lead to security problems. D. Michael Bennett, chief information officer and senior vice president of information management at BAE Systems (www.baesystems.com), notes that if capacity issues aren't addressed with careful planning, services will be progressively more difficult to handle. Further, more employees can mean more mobile users, and this can introduce other security problems.

"There is an increasing expectation that information be available from anywhere on any device," Bennett says. "Adding to the problem is the fact that the new generation of mobile devices—iPads in particular—are consumer devices lacking in enterprise manageability and optimized for seamless connectivity to the cloud. [This is] good for individual users [and] bad for enterprise security."

Every new device type that gains access to an organization's data introduces new vectors of malware infection and subsequent data loss, adds Mike Paquette, chief security officer of Corero Network Security (www.corero.com). He says that as a workforce grows, IT security staff must remain in control of the types of devices and applications that gain access to network-attached resources. Further, this access should be allowed only after security reviews conclude that the risk of malware infection and data breach presented by the devices or software is acceptably low, he advises.

According to Hembroff, an established security policy is only as effective as its level of enforcement. Simply because an organization has had past success in securing its network and enforcing policy through firewalls and intrusion detection systems doesn't mean it will reach the same level of security with mobile devices—unless it adapts to the infusion. For example, he says, a significant percentage of mobile devices rely on internal firewalls that are currently incapable of deep packet inspection, meaning they're at risk of exploits that target data theft.

With more employees, companies are often faced with the challenge of integrating new technologies to accommodate remote work environments.

FACING NEW CHALLENGES

With more employees, companies are often faced with the challenge of integrating new technologies to accommodate remote work environments. These technologies can have a big productivity impact on areas such as telecommunications and storage, but they can also introduce new security concerns. Implementing new tools to handle a larger employee base might be necessary, but that doesn't mean IT staff shouldn't look past potential dangers that come with them.

"Telepresence and videoconferencing can be thought of as a subset of social networking applications," Paquette says. "While there is nothing inherently insecure about these applications, they are frequently used in ways that might subject the organization to risks. For example, the regular uploading of videos may increase the likelihood that a malware-infected video might find its way onto an organization's computers,

➤➤ WICKED BREW

As an organization adds employees, it can create a cauldron teeming with potential security threats. James McMurry, chief executive officer of Milton Security Group, outlines several of the security-related challenges growing businesses face today:

➤ Lack of encryption on portable storage systems, notebooks (whole-disk encryption), and USB devices can increase the potential for system breaches and data loss.

➤ The growth of bring-your-own-device policies and social media raises concerns about how these tools are used and what company data employees are leaking through them.

➤ The expectation of employees to have access to applications and information from anywhere with any device increases the blur between personal life and work life.

➤ The rise of cloud services leads to concerns over whether a particular provider follows organization-required compliance mandates such as Sarbanes-Oxley, HIPAA, and others.

tablets, or smartphones, [creating] a compromised system that may lead to data leakage."

New storage devices and practices can prove even more problematic. Paquette notes that a growing, more mobile workforce can easily exacerbate the already significant concerns around data storage. Not only do more employees today access their organization's data from laptops, home computers, tablets, or smartphones, but also more employees are now taking advantage of cloud-based data services to back up their devices.

"Although the intent may be to back up personal data, company and customer data is commonly mixed in with personal data as part of the backup, thus exposing the organization's data to any risks associated with the chosen backup service," say Paquette. "While most online backup services use encryption to ensure the privacy of the backed-up data, the encryption is only as good as the password used to secure it."

Unfortunately, many employees use subpar password practices such as sharing the same password among multiple accounts, Paquette adds. In a case such as this, a stolen password could lead to an intruder gaining access to the user's data storage service, and in turn the organization's data. Strong passwords and password strategies—including using separate passwords for different accounts—can help to keep data secure on various storage mediums, including mobile mediums, which continue to account for high-profile data leaks across many industries.

"Storage of data amid mobile devices requires strong and enforceable security policies and education of users who operate these devices. Technical solutions of encrypting mobile devices and the transmission mediums they utilize are available; however, many companies fail to implement them. Even when policies are defined, often users are not properly educated to follow these established procedures. For example, policies prohibiting the copying or transferring of sensitive data from one device to another are too often not explained or enforced and result in security risks for the organization," Hembroff says.

PLANNING IS KEY

Without a doubt, planning remains the most critical component to securing a growing workforce. As systems, software, and access strategies are considered, organizations must keep security high on priority lists to ensure that the eventual implementations—and the technologies used to complete them—won't place the organization at risk. Employees today take anywhere, anytime access for granted, so it's up to IT personnel not only to deliver it, but to also deliver it in a fashion that keeps company assets protected. For some businesses, this process might require looking at their existing architectures to determine how to accommodate the bigger (and inevitably changing) workforce.

"The challenge for most organizations is to reduce the risk that a data breach or other type of security incident [creates]," Paquette says. "Stepping back and reviewing data access patterns may prompt organizations to consider making changes to their overall IT network design, such as moving network security devices, such as intrusion prevention systems, Web application firewalls, and DDoS defense systems, closer to the actual server data center where they can protect data against both externally and internally originated cyber attacks."

A growing workforce not only changes the complexion of an organization, but it also can change the way it operates on a daily basis, particularly from a security standpoint. In fact, Bennett says the addition of mobile users will eventually force businesses to redesign their networks to be inherently secure. This could involve the integration of some form of VDI (virtual desktop infrastructure) or remote display technology that isolates devices from the data and controls access based on factors such as the user, the user's location, and data sensitivity.



D. Michael Bennett, chief information officer and senior vice president of information management, BAE Systems

"Security must be considered from the beginning of project design and incorporated into the architecture and solution."



Mike Paquette, chief security officer, Corero Network Security

"Security-related challenges arise from the requirement to promote Internet-enabled business operations while keeping company and customer data private."



Guy Hembroff, associate professor and chair of the Computer Network and System Administration program, Michigan Technological University

"New technologies, such as mobile devices, have once again changed the security landscape. However, many of the critical vulnerabilities of these devices are similar to those in traditional networks."



James McMurry, chief executive officer, Milton Security Group

"Minimize the amount of data that each employee has access to. Keep it to only what they need to do their job."



READY for BUSINESS

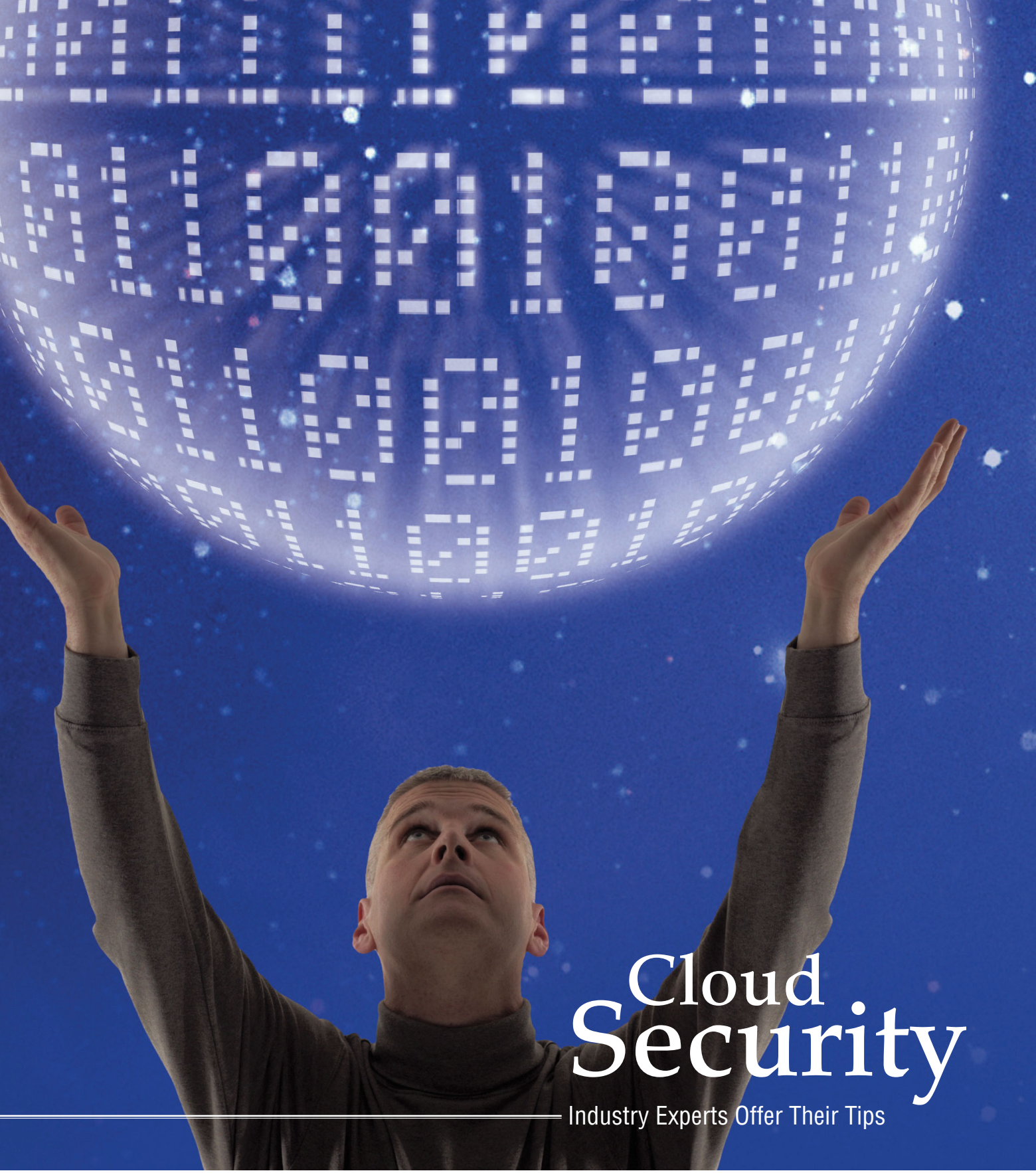
Technology that works where you do.

Best Buy For Business™ has everything you need to stay connected wherever business takes you. Our Account Managers are ready to outfit you with tablets, smartphones, mobile hotspots and more. Now it only matters when you want to work—not where.

Learn how we can help at
BestBuyForBusiness.com
or call **1-888-838-4287**.

BEST BUY FOR BUSINESS

BEST BUY, the BEST BUY logo, the tag design, BEST BUY FOR BUSINESS and the BEST BUY FOR BUSINESS logo are trademarks of BBY Solutions, Inc.
© 2011 BBY Solutions, Inc. All Rights Reserved. BBY11326



Cloud Security

Industry Experts Offer Their Tips

Key Points

- Cloud security is customizable; shop for a provider that will cater to your specific needs.
- Implement strict password and other standards for your employees to use.
- Learn the difference between public, private, and hybrid clouds, and assess which is best for your company.
- Review your own internal security protocols—and those required by your insurer—before you commit to a cloud provider.

To believe the conventional computing wisdom, there is no point in resisting the cloud.

Cloud computing has been advertised as a cure-all for storage and space problems that have plagued businesses' computer systems for decades.

But of course, no storage solution is perfect, and the cloud is not without its risks. What are the security gambles your business faces if you move your applications or storage to the cloud, and how can you best avoid them?

Before we get into that, we should define our terms. Cloud computing, of course, is a set of pooled computing resources delivered over the Internet, usually paid for by subscriptions. It makes once-expensive assets, such as hard drive storage and processing cycles accessible and affordable. But in the case of cloud storage, a number of clients might be using the same space.

Cloud storage comes in three varieties: Public, private, and hybrid. As you can probably guess, a private cloud—a storage space that belongs exclusively to you—offers the most security, but it is the most expensive. A public cloud is cheaper but is shared with others. A hybrid cloud might consist of two or more clouds that are unique but are bound together, perhaps operated by the same storage service.

A 2008 Cisco survey put security at the top of user concerns about the cloud. Following are some ways to feel more secure about jumping in.

GO SHOPPING

One key to getting maximum security from your cloud provider is to do your homework and shop around.

"Don't be lulled into a false sense of security by a brand name," says Andrew Storms, director of security operations for San Francisco-based nCircle (www.ncircle.com), a network security and compliance auditing firm. "You may get better security and service from a smaller provider."

Take the time to review various vendors' security audits and service-level agreements. Get everything in writing, and keep in mind that in cloud security, as elsewhere, you get what you pay for.

"Companies face the same temptation in the cloud that they've faced for years in their internal networks: The temptation to skimp on security," says Pierluigi Stella, chief technology officer with Network Box USA (www.networkboxusa.com). "Don't succumb to the idea that a firewall is good enough, don't try to save money on cloud security, and make sure your employees are well-trained."

And whatever your service provider promises you, get it in writing, urges Tom McAndrew, vice president of Professional Services at Louisville, Ky.,-based Coalfire Systems (www.coalfiresystems.com).

"Compare the service provider's contracts with the regulatory needs of your business," he says. "Your provider must acknowledge in writing [its] responsibility to protect your data. Contracts must stipulate that the provider understands what type of data they are dealing with. This will guarantee its protection and make sure that [it] will notify you immediately if there is any suspected incident. Also, make sure that if an incident does occur that [the service provider] will cooperate with any investigation."

The cloud vendor's internal security and policies must be checked carefully before committing to a contract,



Jody Little,
vice president,
Fujitsu America

"If you pick the right cloud, one built with built-in security, then you don't have to change your applications."



Andrew Storms,
director of security operations, nCircle

"You may get better security and service from a smaller provider."

according to Jody Little, a vice president with Fujitsu America. "Your insurance carrier will insist on it," she says, "and will probably want other due-diligence measures, as well—all of which will raise the cost of cloud options relative to taking or keeping those services in-house."

Don't be afraid to be a bit paranoid about your service providers, says Little.

"It's called a cloud because you can't see inside it," she says. "You might trust a cloud-services vendor with a familiar name and an office located near you, only to find that your data has been placed on a server in a third-world country where neither the electrical nor the moral codes are what you are used to."

Rob Schilperoort, vice president of Cloud Product Management for ACS (www.acs-inc.com), A Xerox Company, advises choosing a full-service provider—in other words, make sure your cloud service offers the process, management and security rigor that you need. "There are several cloud providers that offer enterprise-level solutions that integrate with your security, service management, and financial systems, making the cloud part of your overall infrastructure," says Schilperoort.

WHAT'S THE PASSWORD?

It's likely that your company has some sort of data security governance requirements, even informal ones. Use that information to identify and understand your risks in going to the cloud,

and understand that because you're responsible for the integrity of corporate data wherever it resides, you need to meet governance requirements with cloud-based apps just as you would with on-premises applications.

"Setting up proper governance and oversight for managing the risk of cloud-based apps will help the process of actually bringing them into the fold," says Frank Villavicencio, an executive vice president at New York-based Identropy (www.identropy.com). "Compile a comprehensive security assessment questionnaire that considers access governance, as well as privacy and identity information. Find out how the vendor deals with personally identifiable information and protects privacy."

And while business entrepreneurs are by nature the do-it-yourself type, keep in mind that implementing a cloud security initiative isn't like setting up a home network. Your service provider or even a third-party provider should be called on to make sure your cloud is airtight and running properly, says Stella.

"Don't try to set up your cloud security by yourself," he says. "If you don't have it configured and maintained by trained service providers, it can be worse than not having any security at all. It costs money, but it's money well spent—you're paying to protect your business's most important asset."

In order for cloud security to work, your employees have to develop and keep top-notch security practices when using the cloud.

Experts recommend such steps as using a multifactor token such as a smart card for use when logging in to your cloud. Although most sites use usernames and passwords, it's human nature to want to sacrifice security for convenience: using the same password used in multiple places or even jotting down passwords on pieces of paper left near your computer.

"In the cloud, more than in other infrastructures, having a strong password is key," says Schilperoort. "This includes the normal rules for strong passwords, but also regular changes and limited access to those passwords. Disgruntled ex-employees or contractors can much more easily access servers attached to the cloud than servers attached only to your internal networks."

Little adds that it's important to have regular data recovery drills to assure that proper retrieval and decryption procedures are in place and working properly before disaster strikes.

"There's nothing 'automagic' about data recovery," she says. "Major corporations and minor firms alike have found out that the process of recovering data that's stored on (a cloud in) another continent is as complicated and prone to failure as language-translation software," Little explains.

WORK WITH YOUR VENDOR

With the variety of packages and combinations of cloud security out there, it's easier—and more important—than ever to create a customized cloud security package that best fits your business. Remember that it's up to you to ask for the services you want.



Tom McAndrew, vice president of Professional Services, Coalfire Systems

"Ensure that all of your stakeholders—including external auditors, regulators, and IT staff—understand what cloud computing is."



Adam Rice, global chief security officer, Tata Communications

"Conduct a security risk assessment on the information and data within your realm of control, and make sure a cloud solution defends against these risks."

"Conduct a security risk assessment on the information and data within your realm of control, and make sure a cloud solution defends against these risks," says Adam Rice, global chief security officer for India-based Tata Communications (www.tatacommunications.com). "Because the cloud has a shared security model, explicitly identify where the responsibility for the risks lay, and then look for controls that the cloud provider can deliver—backups, site replication, stored images, and data segregation can all be with cloud providers. Make no assumptions."

Rice points out that responsibility for cloud security is a team effort between you and your service provider.

"The cloud may be an evolving paradigm, but the approach to security needs to go back to the basics," he says. "Does the cloud support a customer's business imperatives, and can a provider demonstrate that it can safeguard these imperatives? It's not just a case of 'let the buyer beware;' buyers also need to be smart and educated."

You shouldn't put the entire security burden on your cloud service provider; in general, that's not their area of expertise or their responsibility—it's your own security initiatives that should be counted on to protect your data, says Little.

"A vendor that can provide you with email services shouldn't care whether your email are encrypted or not, and it's a lot safer to use the end-to-end encryption that's already built in to every major email client, since doing that prevents anyone but the senders and recipients of emails being able to read them," she says.

"Always view cloud computers as a glass-walled semi-trailer that anyone on the information superhighway can peer inside at will," concludes Little. "Take steps to protect vital information while it's outside your walls—take steps that you control and manage."

Fight Complacency

With Network Box Managed Security Services

NETWORK BOX

Complacency is the biggest problem in security today, says Michael Gazeley, managing director of Network Box Corp., LTD (www.networkboxusa.com), a global provider of managed security services, including for more than 150 financial institutions in the U.S. alone. As Gazeley sees it, if your company's management isn't making security a priority, your IT managers probably aren't either.

While companies go to great lengths to monitor office visitors, Gazeley says, "Businesses seem unwilling to spend either time or money on gateway security, yet the Internet gateway is switched on 24/7 and represents one of the greatest threats to their business."

HOW MANAGED SECURITY SERVICES WORK

Network Box eases the burden and complexity of managing and monitoring Internet protection via its Managed Security Services. The company's approach relies on a global network of SOCs (Security Operation Centers) that oversee about 4,000 devices globally. Security-trained analysts at each SOC provide 24/7/365 real-time monitoring of more than 1,500 data networks tied to Network Box UTM (unified threat management) devices seated at companies' Internet gateway entry points.

Unique to Network Box's security protection is the use of patented PUSH technology, which automatically pushes antivirus signatures, security patches, and software updates from the SOCs to customer devices within 45 seconds of availability. The Managed Security Services package also includes threat analysis, bandwidth management, license management, change control, load balancing, and security consulting capabilities. Its UTM+ protection includes firewall, IDP, VPN, antimalware, antispam, and content filtering protection.

According to Pierluigi Stella, Network Box USA's CTO, a more traditional approach would involve IT monitoring multiple physical devices for Internet threats and then adding patches, applying signatures, etc. Instead, Network Box's managed security approach lets even a one-person operation implement affordable enterprise-class security, monitoring, and management abilities.

FIGHT THE ARMS RACE IN REAL TIME

Gazeley views cybersecurity as a whole as an arms race, with antivirus systems playing a key role. One of several technologies Network Box employs to combat malware is Z-Scan, a real-time, cloud-based antivirus solution the company says can react to zero-day malware 4,200 times faster than standard antivirus systems, thus blocking new viruses in as little as three seconds.

Recently, the Tolly Group IT security testing lab cited Network Box as being 100% effective in testing that was conducted using Tolly's Extended WildList of malware and samples from AV-Test, including virus, worm, rootkit, Trojan, and backdoor samples tested across HTTP, POP3, and SMTP protocols.

DON'T WAIT

As Gazeley says, the consequences of making Internet security less than a top priority include intellectual property theft, downtime, and expensive lawsuits related to confidential data losses. With Network Box's Managed Security Services in place, however, companies of nearly any size can acquire real-time monitoring and management to ensure that such situations don't occur.

"Protection needs to be comprehensive, properly configured, fully updated in real time, expertly managed, and carefully monitored," Gazeley says. Management can either deal with these issues before problems occur or wait until it's too late. "My advice to everyone," says Gazeley, "is to get protected right now. Why be a victim?"



Network Box devices are constructed of industrial-grade material without Network Box passing the costs off to customers.

Network Box USA | (888) 315-8886 | www.networkboxusa.com



Security Expenses

Where Do You Draw The Line?

With the current downward trend in the global economy, many corporate executives are putting on more pressure to lower budgets, or at least keep them level with last year's numbers. Although you may have a compelling reason to manage your company's budgets across the board, it's important to understand your IT manager's needs, especially in regard to security-related expenses.

SECURITY NEEDS VS. WANTS

Too often, IT departments make security-related decisions based on a technology-centric viewpoint; they essentially budget for what they want rather than what their company needs. That's not to say that a particular security proposal is without merit. It may meet your company's needs long enough to more than make up for the initial cost. But overall requirements should trump technology.

With that in mind, we queried security specialists about the solutions they recommend, and the typical cost per user. We asked the specialists to base their answers on two business models: small (500 or fewer employees working from a single location), and medium (1,500 or fewer employees working either from multiple sites or a single campus). We didn't specify a type of business other than to separate the information into two broad categories: non-regulated businesses and businesses that are subject to some type of regulation such as HIPAA.

SECURITY COSTS FOR NON-REGULATED BUSINESSES

Jerry Irvine, CIO of Prescient Solutions (prescientsolutions.com), gave us his recommendations for a basic computer data security system designed to protect both a company's infrastructure and its individual clients/users.

Infrastructure Security: firewall, ACL (Access Control List), patch management system

Client/User Base Security: antivirus, server/workstation firewalls, patch management

The infrastructure firewall cost for 500 users would run around $3,000 to $5,000, depending on the services included, such as antivirus or anti-spam programs. There would be an additional maintenance cost of about $300 per year and likely a per-user license cost.

If performed manually, ACL and patch management costs could be as low as zero (not including labor), using the free, out-of-the-box services included with most OSes. Client-based firewalls (those that operate on a user's computer) could also be considered free, again if operated manually, and not including IT labor costs.

Antivirus support for both servers and workstations would run between $30 and $40 per year, per license. Assuming 500 users and 20 servers, that's an estimated yearly cost of $15,600 to $20,800.

As a managed services provider, Chad Lauterbach, president of Be

Key Points

- Computer-related security costs can range from about $33.80 per user for a bare-bones system to over $150 per user for a sturdier system.
- Regulated businesses have a higher per-user cost for security protection.
- Many OSes include some of the security features you'll need such as client-based firewalls.
- The failure to implement data security measures can be far more costly in the long run than any dollar savings you may see in the short term.

Structured Techonology Group (be structured.com) says, "We would look to provide message archiving and anti-spam/malware/virus systems, all from our central systems. Cost would be approximately $20 to $25 per user per month."

If we use the lower estimate and assume a three-year lifetime for security appliances, such as a firewall, and any software, the total cost could reach the neighborhood of $50,700 over three years, or $33.80 per user, per year, for a very basic secure environment. This solution wouldn't provide protection against the top security vectors, as outlined by the SANS Institute (www.sans.org/top-cyber-security-risks).

Toss in automated patch management, to ensure that all security patches are applied on all infrastructure appliances and client workstations, and you'll need another $6,000 in your budget. That may seem like quite a premium over the DIY-for-free option mentioned previously, but as Irvine points out, "The cost of remediation associated with not patching the same environment was $15,000 of service, $6,000 for the implementation of WSUS (Windows Server Update Services), and an unknown cost for loss of data and systems downtime related to the problem. This represents almost a 300% increase over and above the cost of the patch management solution."

Addressing Web-based application vulnerabilities using an application scanner twice a year would run another $10,000 ($5,000 x 2).

Testing against zero-day vulnerabilities requires the use of a VA (vulnerability assessment) scanner. Microsoft includes a free VA tool in its workstation OSes; you'll also need a third-party VA scanner to cover your servers, firewalls, switches, and routers; essentially anything on your network that uses some type of OS. Let's assume you have 20 servers and 80 network devices—your setup would require a 100-user license for the VA scanner, at about $100 per license, or $10,000.

The cost per year for the enhanced security capabilities would be:
Automated patch management: $6,000
Web application scanner: $10,000
Vulnerability assessment: $10,000
Total cost: $26,000 or $52 per user

The final word on our hypothetical 500-employee, non-regulated business is a per-user cost that ranges from $33.80 per year when implementing the bare minimum system (not recommended) to $85.80 per year when adding enhanced security capabilities to $150 per year when protecting against the top security issues.

Surprisingly, the cost scales up nicely for a medium-sized company. Don't forget to increase the number or size of specific assets, such as firewalls and security appliances, to cover the larger client count.

SECURITY COSTS FOR REGULATED COMPANIES

If you do business in a regulated environment you have some additional cost burdens to consider including data encryption to protect sensitive information. Security costs may double when working with some government or other security-minded businesses that require an entirely separate network to contain data for specific projects, products, or services.

Setting aside the cost of a separate secure network, the cost can still easily be 20 to 25% higher than for a non-regulated business because of data encryption requirements and, in some cases, the need for specific security software that carries a higher unit or per-user license cost.

Outsourcing data sanitation is usually the least expensive way to remove data. Software-based data erasure services range from $5 to $25 per unit. Hardware-based sanitation, such as degaussing and shredding, has a higher cost because of the labor required.

Transporting equipment that contains controlled data has a surprisingly high cost; especially if the data isn't encrypted. The process may require serialization checks at each end and the use of locked, tamper-proof containers and/or containers with GPS tracking equipment. The cost can range from $8 to $12 per unit, with higher costs for GPS or any type of escort. If you're moving unencrypted data, and an escort is required, the cost can easily move beyond $75 per unit.

TAKE THE LONG VIEW

When you're trying to decide where to put your budget dollars to work, consider not only what is being proposed, and what is required by any regulations, but also what it may end up costing your company if you choose not to implement security measures.



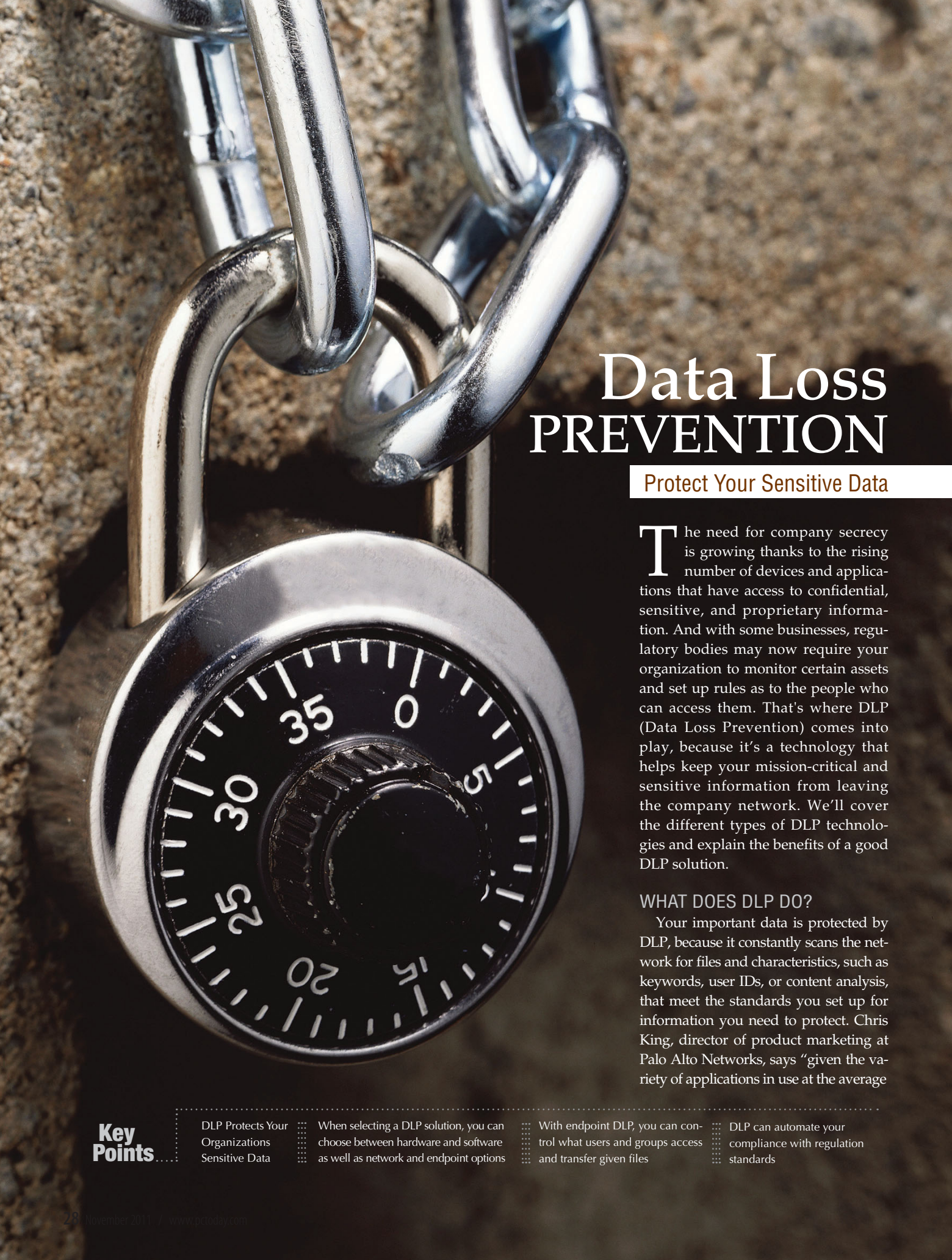
Jerry Irvine,
CIO Prescient Solutions

"The biggest security mistake we continue to see is the lack of security applications, platforms, and policies in place at the average company or organization. The purchase of minimal but necessary security-related IT systems is always less expensive than the remediation cost which could have been mitigated with their implementation."



Chad Lauterbach,
president Be Structured Technology Group

"Many cloud providers provide sufficient security for non-regulated industries and can be in compliance with regulated ones without substantial additional cost."



Data Loss PREVENTION

Protect Your Sensitive Data

The need for company secrecy is growing thanks to the rising number of devices and applications that have access to confidential, sensitive, and proprietary information. And with some businesses, regulatory bodies may now require your organization to monitor certain assets and set up rules as to the people who can access them. That's where DLP (Data Loss Prevention) comes into play, because it's a technology that helps keep your mission-critical and sensitive information from leaving the company network. We'll cover the different types of DLP technologies and explain the benefits of a good DLP solution.

WHAT DOES DLP DO?

Your important data is protected by DLP, because it constantly scans the network for files and characteristics, such as keywords, user IDs, or content analysis, that meet the standards you set up for information you need to protect. Chris King, director of product marketing at Palo Alto Networks, says "given the variety of applications in use at the average

Key Points

- DLP Protects Your Organizations Sensitive Data
- When selecting a DLP solution, you can choose between hardware and software as well as network and endpoint options
- With endpoint DLP, you can control what users and groups access and transfer given files
- DLP can automate your compliance with regulation standards

enterprise [each app is a potential conduit for data leaks], this is a particularly tough thing to achieve. I might point out that there is no single technology that can accomplish this for enterprises—it will take a combination of policy, process, and multiple technologies."

Most DLP options are configurable when it comes to choosing the extent of control and which areas of the company you'd like to protect. For example, some may opt to secure Web-based apps or email messages, or find a solution that covers both. Another common option would be to secure the network's endpoints, which can include network openings, wireless networks, and removable media. The amount of control and protection you select may depend upon your business, budget, and company policies.

DLP OPTIONS

DLP technology is available as software or hardware. With hardware, you'll have a purpose-built appliance that's designed to monitor network traffic. King says "our next-generation firewall enables organizations to see and control which applications run on their networks. Furthermore, for the applications they choose to enable, we can scan that allowed traffic for certain types of data—[such as] certain types of files, credit cards, certain strings like SSN. This is across all allowed applications, including those that might be SSL encrypted."

DLP software is typically capable of performing data identification, and once the data is located, it will be tracked to monitor the information to see where it goes and who accesses it. If an unauthorized user attempts to move a file to somewhere that would be perceived as a threat, such as to an unencrypted flash drive, you can configure the software to prevent the data from being written.

Within the hardware and software choices, DLP can be split among two general categories: endpoint and network. Endpoint (also called host-based) DLP must be installed onto your servers and run on any workstations, so all of the computers on your network will need to have the DLP software installed. You'll also need to set up individual policies for your employees. The advantage of endpoint DLP is that files can be actively protected, so you could actually block attempts at data transmission, if the end location is not supported, and monitor when and where files move.

Network DLP can be hardware- or software-based, and its job is to scan all traffic moving across the LAN. Many new DLP software providers offer programs that offer both endpoint and hardware protection, so you'll be able to utilize both types of protection within your organization. King says, "Probably the most important advice is that there isn't a "silver bullet" single technology approach. Controlling the conduits that attackers employ to transfer the data is a great start. Stanching the unauthorized flow of credit card data is another good thing to do. Looking closely at encrypted traffic is another best practice. But again, no single technique solves the entire problem of data leak/loss."

BENEFITS OF DLP

Sensitive data can come in many forms. Some examples include intellectual property, financial data, confidential customer information, and trade secrets. Besides helping to prevent data from getting into the wrong hands, DLP will also help to protect your company's reputation. Negative exposure can also have a big effect on your bottom line. For example, a recent study from Ponemon found that a U.S. financial institution could lose 5.2 customers for every 100 that it notifies of a data breach.

After you set up what items are of a sensitive nature, a DLP solution provides centralized control of your data infrastructure and gives you an idea of where the data is stored. When you know how much data you'll need to protect, you can create policies for individual users and groups that allow access to those critical assets. The management of DLP also provides a way for you to comply with regulations that require you to implement protection, visibility, and enforcement within your organization.

Besides external attacks, DLP endpoint options can prevent the accidental and malicious spread of confidential data. For example, let's say that an employee attempts to send sensitive intellectual property through an email attachment. The DLP endpoint protection could block the email from being sent as well as quarantine the employee's workstation. Many new DLP solutions are also capable of preventing accidental exposure through social networking, instant messaging, and other popular new—but unsecure—forms of online communication.

COMPLIANCE

Key regulatory standards include HIPAA (Health Insurance Portability And Accountability Act)/HITECH (Health Information Technology For Economic And Clinical Health), SOX (Sarbanes-Oxley Act), GLBA (Gramm-Leach-Bliley Act), and PCI DSS (Payment Card Industry Data Security Standard). If your organization requires corporate governance, DLP can automate the compliance, logging, and reporting for enforcement. Changes that need to be made in the policy, such as if a tougher regulatory standard is necessary, can be altered quickly through policy templates.

ASSESSING YOUR RISK

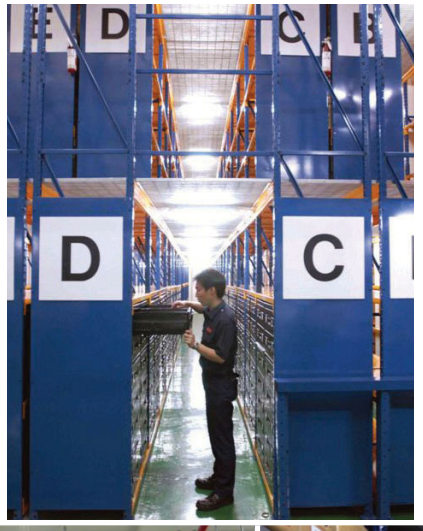
To figure out if DLP is right for you, the first step is performing a risk assessment, which is a process that will figure out the possible magnitude of your potential loss. The risk assessment may also take into account the likelihood that your particular organization will experience data loss. Based on the risk assessment, you can figure out if DLP is necessary for your business. ●

Document Management

Configure A File System Tailored To Your Business

Every document has a life. Someone creates it, another person edits it, a group distributes it, and then it's archived or eliminated. But this is rarely a linear process, especially if the document moves between departments and requires detailed tracking for future use.

Back in the day (or maybe even right now), you might store your documents in a multipurpose file cabinet, accessible to a number of employees. But in 2011 and beyond, storage-and-retrieval systems look more like a technology called document management. If you're ready to streamline the way you administer documents, consider the advice of the experts we spoke with regarding the advantages of document management.



FOR BUSINESSES BIG & SMALL

Document management incorporates both paper documents converted to an electric format and files created with an office application. Relying on either a Web-based SaaS (software as a service) or internal deployment structure, businesses can go paperless (or almost paperless, at least) without decreasing productivity or ROI. To put it plainly, "The primary goal is to ensure that staff and management can quickly locate, retrieve and use important information to perform their daily tasks associated with running the business.," according to Greg Milliken, president of M-Files (www.m-files.com).

"A key element of organizing this information pertains to classifying it, or assigning properties or attributes to help categorize documents in a meaningful way for future retrieval," Milliken says. "It encompasses controlling access to documents so that only authorized personnel can access confidential information, tracking version history to provide easy access to previous versions of documents to both show how documents were created and modified over time, but also to ensure important work is not lost."

"The primary goal is to ensure that staff and management can quickly locate, retrieve and use important information to perform their daily tasks associated with running the business," says Greg Milliken, president of M-Files (www.m-files.com).

These priorities should be important to any business that values the organizational stewardship of document processing. What's more is that the cross-industrial value of document management is obvious when you







Some document management services, such as Crown Records Management (www.crownrms.com), will store your hard copy records, such as cartons, disks, and files, in a secure but accessible warehouse.

consider that available solutions generally support the varying degrees of document types that are unique to accounting, legal practices, the medical field, etc.

"An example of managing processes could include simple review and approval processes of important design documents or contracts, which itself can involve a specialized contract management process," says Milliken. "A common process in accounting that can be automated is invoice processing, where invoices are documents that are received, reviewed and approved and then sent on to accounts payable for payment."

LATE ISN'T NEVER

Because most employees don't enter their positions with "document manager" experience listed on their resumes, document management transitioning is typically outside of a business's "core competency," says Ken Neal, certified enterprise content management practitioner and director of corporate communications for Océ Business Services (www.obs-innovation.com).

Milliken adds, "There are a number of reasons for a [lack of preparedness], but most common is the fact that many times companies simply don't have visibility on the inefficiencies or decreased productivity that document management systems are intended to address."

On the whole, workers spend more time than necessary searching and retrieving documents. Case in point: How many minutes have you wasted scouring network folders for a misfiled Excel sheet? And as a result of these workplace routines, the businesses that tend to procrastinate in the adoption of a document management system may end up shuffling their documents more than actually using them.

"Often times, businesses find a reason to put off addressing the issue until it becomes so bad that it cannot be avoided. To be fair, document management systems have traditionally been very expensive and complicated, making the decision to deploy them somewhat difficult. However, a new generation of document management technology is now available that is both affordable and easy to use and deploy, which now makes widespread adoption more a matter of education," Milliken says.

The new technology Milliken refers to is changing ROI generation in tangible ways, as well. According to research from Andrew Bailey with Cabinet NG (www.cabinetng.com), workers can easily make multiple copies of documents inexpensively (as opposed to using a paper-based system at five cents per copy), search misfiled document databases, determine where a document is within the workflow, and convert paper forms to e-docs.

"There is a direct correlation between effective document management and improved business performance," says Neal. "According to IDC, nearly 70% of U.S. executives surveyed agree that effective document management drives productivity and improved customer service. A significant minority strongly agrees that it drives competitive innovation, profits and revenue."

DOCUMENT MANAGEMENT 101

To elaborate on the lifecycle analogy we presented earlier, there are particular services that encompass document management efficiency. Neal explains several of the most important document management options, whether outsourced or internal: copy center management, print services, mail, records, and e-discovery.

Copy center management allows the document management service to control and monitor reproduction costs associated with equipment, software, staff, and process design. Managed print services optimize print, copy, and fax services into a single-point approach. Mail management involves "coordinating mail and shipping activities by utilizing best practices, such as digital mail and automated tracking technology, to achieve savings and streamline processes," Neal says.

The responsibility of records management includes consulting, archiving, file room organization, and "developing records policies, retention schedules, and software selection and implementation," says Neal. And, if you incorporate an e-discovery platform, you'll be proactively compliant with industry regulations.

TOWARD A PAPERLESS OFFICE

It's true that storing your data in server-based folders will provide multi-department document accessibility, but the drawbacks to this system, such as laborious filing steps, inefficient searchability, and training end users to file documents appropriately, point to the necessity of a more controlled, easily auditable system.



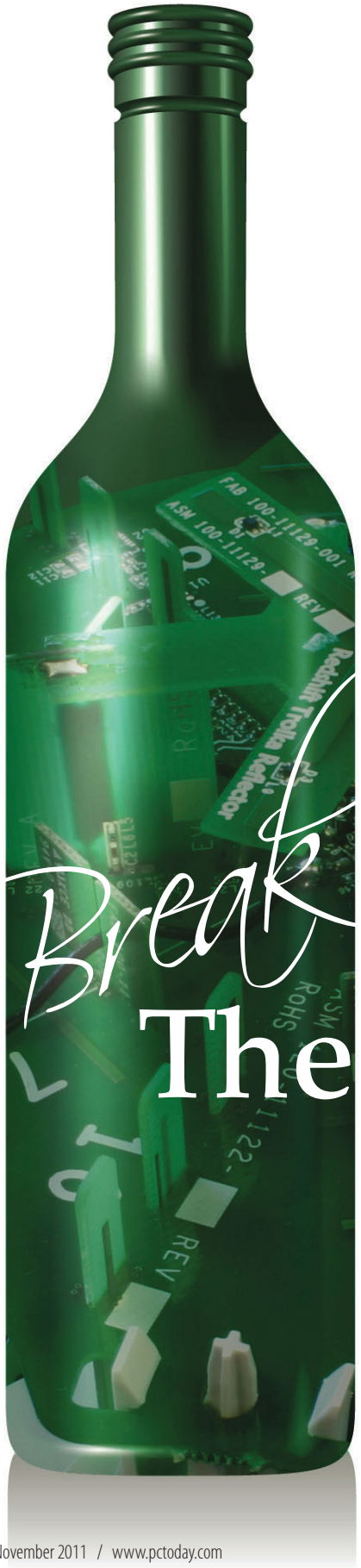
Greg Milliken,
president, M-Files

"Businesses simply need to be informed of the solutions that are available and realize that a document management system is a necessity to compete in an increasingly competitive and economically challenging business environment."



Ken Neal,
certified enterprise content management practitioner and director of corporate communications, Océ Business Services

"Managing documents well can yield many benefits, such as reducing costs, improving customer service, and boosting efficiency. The most successful form of document management involves actively managing documents throughout their lifecycle to maximize their value and minimize risk."



Break The Bottleneck

Find & Fix Your Wi-Fi Weaknesses

Productivity today demands high-speed Wi-Fi access for an ever-broadening array of workers. Unfortunately, the explosive growth in —and dependence on—wireless devices is increasingly responsible for Wi-Fi connections acting like dial-up . . . or worse.

"Everybody knows that microwave ovens and cordless phones can interfere with Wi-Fi," says David Callisch, vice president of marketing at Ruckus Wireless (www.ruckuswireless.com). "Not as many people understand that all of your Wi-Fi clients interfere with each other. Also, how the AP (access point) optimizes signals for its clients—especially a *lot* of clients—can have a huge impact on performance for everyone connected." A handful of key issues contribute to shoddy Wi-Fi performance, even on 802.11n networks, and it's worth understanding them in order to better guide your wireless networking efforts.

TOP PROBLEMS: CONTENTION & INTERFERENCE

Remember that walkie-talkies require two users to be on the same channel and only speak when no one else (including any nearby strangers) is using that channel. This is how Wi-Fi clients operate with APs. On any given channel (there are only three non-overlapping channels in the 2.4GHz Wi-Fi spectrum), an AP can only communicate with one client at a time. If your notebook is waiting for a clear opportunity to pass data on channel 1, but surrounding networks keep blasting traffic across your frequency, your notebook may be waiting for a relatively long time for a chance to communicate. This situation, where multiple users are vying for a single point of access, is called contention.

The presence of slower (for example, 802.11b or 802.11g) devices on the channel only compounds the problem. Moreover, if a nearby interference source throws RF (radio frequency) noise across that channel, it has the same impact on client-AP communications, causing a repeated blocking of packets and periods of waiting for chances to resend.

In short, our Wi-Fi communications get slaughtered when we have too much traffic on a channel, when some of that traffic is relatively slow, or interference blasts through that wireless channel and disrupts valid IP traffic. All too often, these things happen simultaneously.

TOP FOUR FIXES

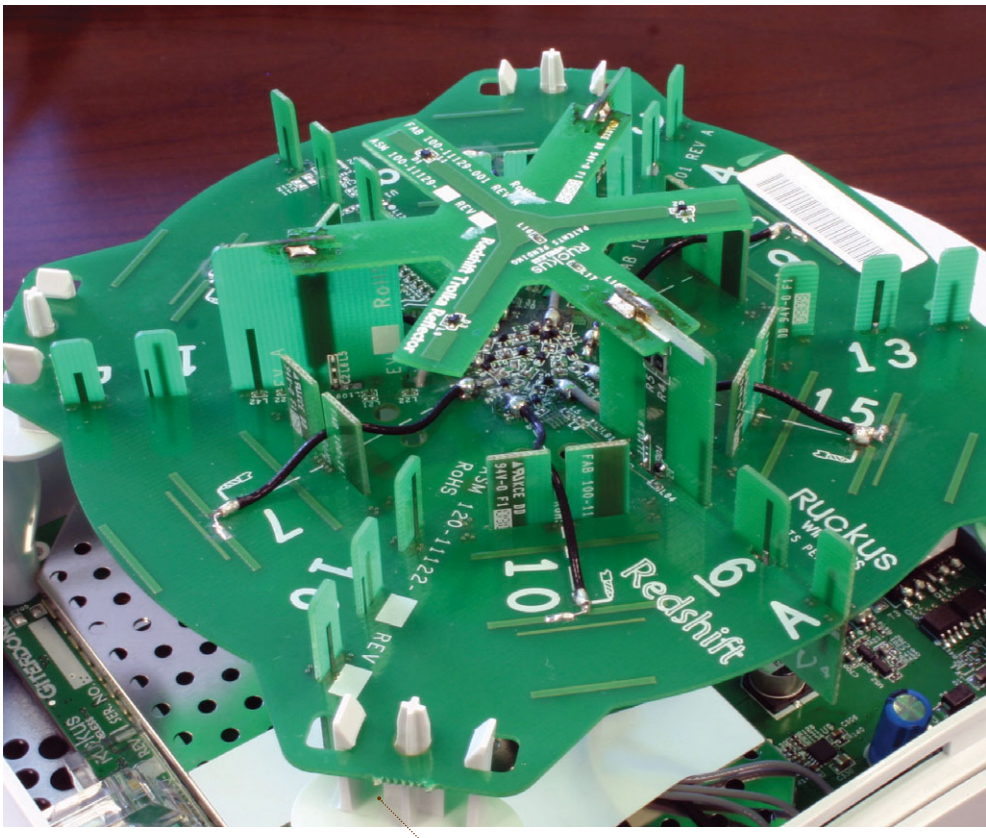
1. Find more open channels. Low-end networking gear seems to gravitate to the 2.4GHz spectrum, where conditions are the most crowded and performance can be poor. To counter this, push as much Wi-Fi traffic as possible into the

5GHz band, where there are eight non-overlapping channels. Consider using dedicated 5GHz APs or, in the case of single wireless routers, an AP that supports simultaneous dual-band.

2. Look for airtime fairness. In the face of contention, APs dictate which clients they'll listen to and when they'll listen to them. Rather than let slow client packets set the traffic speed for all clients on that channel, the airtime fairness feature can let APs segregate connected clients based on their performance. A fast client will get a given amount of time in which to communicate, then a slow client will get the same amount of time in its turn, and so on. This ensures higher performance for faster devices as well as all clients getting a chance to move packets.

3. Boost power. When you have trouble communicating with someone, it's natural to slow down and repeat yourself. In wired networking, packets that can't be understood at 1,000Mbps are often received in perfect order at 100Mbps. This approach carries over into wireless networking, with APs dropping their transmit and receive power in order to lower the data rate. Unfortunately, this not only impairs reception to clients beyond optimal range, it also extends the in-air time that a packet can be disrupted by interference. The better approach for APs is to *raise* transmit/receive power in the face of poor conditions.

4. Use beamforming. When two sets of waves overlap, they create patterns. In these patters, there are zones of troughs and crests that progress in a given direction when the frequencies of the signals are properly coordinated. In this way, a "beam" of overlapping, amplified crests (yielding a zone of amplified signal) can be aimed at a distant point. An AP with at least two antennae can thus use "beamforming" to establish a higher-power connection with a client—provided the AP supports beamforming. When beamforming is done with directional rather than omnidirectional antennae (the latter being far more common), the effect is usually even greater, in part because the directional antennas ignore all other traffic and noise outside their focused signal path.



This internal look at the Ruckus Wireless 7962 AP reveals the many directional antennas housed within the unit, all of which are managed through on-device algorithms to adapt Wi-Fi connections for best results under changing real-time conditions.

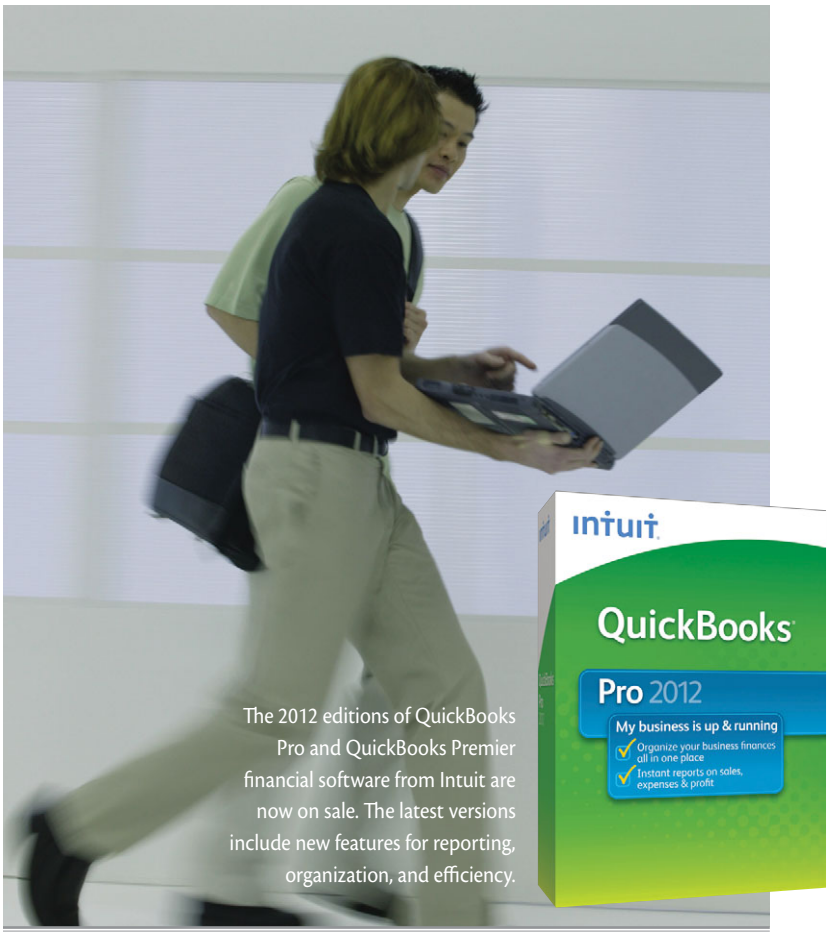
"As you move from consumer-class APs into enterprise-grade gear," says Callisch, "you're going to get more of these tools, but don't believe they're all equal, because tests show they're not. Talk to your vendors and make sure their APs use built-in intelligence to dynamically manage most if not all of these optimization techniques."

BEYOND THE AP

APs can have a tremendous impact on WLAN performance, but they're not the last word. Pablo Estrada, solution architect with Meraki (www.meraki.com), notes that applications also play a significant role. "Administrators need a solution that identifies bandwidth-hungry applications and allows them to be throttled to manageable speeds or blocked entirely, in the case of undesirable traffic," Estrada explains. "This helps ensure that critical applications, such as VoIP, email, and CRM perform adequately and meet the business needs of employees."

Meraki is a business-class wireless networking vendor that specializes in management software. Such software will help admins balance wireless client loads across their network and adapt to changing conditions, sometimes from a remote, cloud-driven interface.

"Careful network monitoring can pinpoint specific problem areas where the quality of the user experience suffers most," says Estrada. "By keeping a close eye on application traffic, administrators can identify which applications consume the most bandwidth, possibly degrading the wireless experience for employees using other applications. This serves as a guideline for future infrastructure investments."



Business Software

The Latest Releases & Updates

When you are already busy keeping on top of your customers, projects, and business needs, monitoring all of the new and updated business software applications is tough. But you also know that advances in technology can help your organization get more done.

To help you zero in on what's new, here's our latest roundup of business software releases and updates.

INTUIT QUICKBOOKS PRO & PREMIER 2012

Financial software maker Intuit (www.intuit.com) has released the 2012 versions of QuickBooks Pro and QuickBooks Premier. The updates include new features for reporting, organization, and efficiency. For reporting, you can benefit from a library of more than 1,000 user-contributed reports. Enhancements to Microsoft Excel integration are also included, letting you manipulate worksheet formatting and apply the format to new reports. The new calendar view includes to-do lists and important tasks such as invoice and bill pay deadlines. To help you stay more organized, the 2012 editions include new sales lead, document management, and inventory centers (inventory available in Premier version only). New timesaving features include batch timesheets for multiple employees or vendors and one-click customer transactions.

INFUSIONSOFT

Infusionsoft (www.infusionsoft.com) has added new features and enhancements to its Web-based sales and marketing automation software, which integrates CRM, email marketing, e-commerce, and automated follow-up. The software's automated email marketing campaigns are updated with new checklist and readiness indicators, campaign statistics, and reporting. To help increase message delivery rates, Infusionsoft's email systems are improved to increase the speed at which emails are sent. For sales and marketing staff, a

new interactive list view simplifies the job of working through a list of contacts or opportunities. For example, you can use the Interactive Panel to add notes, schedule tasks, manage tags, and initiate follow-up. The new release also includes changes to make the Infusionsoft shopping cart easier to configure with the e-commerce setup wizard.

BIT COMPUTING TIMETRACK

Timetrack (www.bitcomputing.com) is a handy tool that is designed to automate the task of tracking the hours you spend on projects. Version 5.0 of Timetrack was recently released with new features including a redesigned dashboard. The dashboard now provides the ability to label time spent for a specific category, task, or note in the activity page and a new task, expense, and notes group. New billing properties for category, task, expense, and notes let you define time spent as billable, do not bill, or no charge and lets you choose billing rate options such as flat rates and hourly billing rates. A new quick notes entry dialog lets you quickly add new notes. And there are new categories, tasks, expenses, users, and certificate management interfaces.

ALTERITY ACCTIVATE!

Alterity, a provider of inventory software that directly integrates with QuickBooks, recently released ACCTivate! 7.3 (www.acctivate.com), which introduces several new benefits. The major features included in the release are a Web store module to simplify e-commerce integration and a copy purchase orders function to increase efficiency. With the new e-commerce feature, Web orders instantly come in as ACCTivate! sales orders. New customers are assigned an ACCTivate! account when they order through the e-commerce Web site; inventory availability is adjusted accordingly. The added functionality to copy purchase orders can be used in multiple ways to meet specific business needs. For example, you can copy requests for quotes to send to multiple vendors or copy closed purchase orders to use as a template for recurring orders.

SAP BusinessObjects Portfolio SAP AG (www.sap.com) announced the global general availability of the 4.0 releases of BI (business intelligence) and EIM (enterprise information management) solutions from the SAP BusinessObjects portfolio, including the SAP BusinessObjects Edge BI software. The solutions offer analytics with real-time, mobile, and social capabilities to help SMEs gain insight and make data-driven decisions. A revised semantic layer provides access to data from multiple SAP and non-SAP sources. New EIM capabilities provide understanding of business information, as well as new intuitive processes for data profiling, metadata management, and data quality monitoring. SAP BusinessObjects Event Insight is a new tool for monitoring and understanding the business impact of events across a network by processing large volumes of event data in real time. You can find and analyze patterns in seemingly unrelated events, and you can define information within a business context via alerts, dashboards, or reports. Capabilities for data governance, sentiment analysis for social media, and cloud deployments are also available with the new release.

TREND MICRO ENTERPRISE DATA PROTECTION

Trend Micro (us.trendmicro.com) announced new software versions for three products in its enterprise data protection software portfolio. ScanMail for Microsoft Exchange (SMEX) 10.2 is a mail-server-based security product, and PortalProtect for Microsoft SharePoint 2.1 protects Microsoft SharePoint installations. The newest versions of these products offer enhanced DLP (data loss prevention), compliance templates, and worldwide data identifiers for custom templates. Both products also offer the new local Smart Protection Server, which offloads the storage of virus/malware signatures and patterns to increase performance and reduce network latency. For regulatory compliance and data protection, the updated InterScan Messaging Security 8.2 features a new data privacy and email encryption module to filter and encrypt email, virtual appliance support for Microsoft Hyper-V (in addition to VMware and a bare-metal software appliance), and a dashboard for easy administration.

Trend Micro announced new versions of products in its enterprise data protection software portfolio: SMEX (ScanMail for Microsoft Exchange) 10.2, PortalProtect for Microsoft SharePoint 2.1, and InterScan Messaging Security 8.2.

PRINTERON ENTERPRISE

PrinterOn, a mobile printing solution, has announced the availability of PrinterOn Enterprise. PrinterOn Enterprise is an on-site solution that lets you print from a supported device while in the office, traveling, or at home. The software components are installed directly on corporate servers, and all processing and encryption of documents is performed on-site to provide secure mobile printing. You can print from any laptop, PC, smartphone, or tablet simply by emailing documents to a PrinterOn Enterprise-enabled printer or by using one of the mobile printing apps. PrinterOn Enterprise uses a secure release code system to keep documents private. An email confirmation containing a code is sent back to you after submitting a document for printing, which you use to release the print. The mobile apps also let you locate the nearest PrinterOn-enabled printer by using geo-based or keyword search features.

Greenovations

Energy-Conscious Tech

The electronic devices that make our lives easier also produce some unwanted side effects on the environment. Fortunately, many consumer electronics manufacturers and businesses are working to create products that keep us productive while reducing energy demands to lessen our impact on the environment. Here, we look at some of the newest environmentally friendly technology initiatives.

MEET THE SOLIO BOLT

Solio has been manufacturing portable solar chargers for a number of years, and its newest model is the Bolt ($70; www.solio.com), which offers the largest battery capacity of Solio products to date. Solio indicates that a fully charged Bolt can produce enough energy to power today's smartphones, including the iPhone or Motorola Droid, for two complete charges. The LED battery indicator on the back of the charger shows you how much of a charge is left and whether the solar panels are currently charging the battery. Insert a pencil or other cylindrical device into the hole in the center of the Solio to angle the Bolt toward the sun for maximum charging efficiency.

A full-sized USB port makes the Solio compatible with a variety of devices; thus, you'll no longer need to carry numerous adapters with you to make whatever portable device you are using work with the solar charger. Charge the Bolt using the sun, via a wall outlet, or using a USB port. Solio includes a Micro USB to USB cable (a Micro USB port is included on the Bolt, as well, in case you need to charge Micro USB devices). The onboard battery is replaceable should you notice a significant decrease in charge over time.



Bolt | $70 | www.solio.com

SOLAR PANEL INSTALLATIONS UP

A report from the SEIA (Solar Energy Industries Association) and GTM Research found that the solar energy industry is on the way up. The most eye-opening statistic in the report was that the U.S. solar photovoltaics market was up 69% over the same period last year, and it gained 17% over the first quarter of 2011. In all, the U.S. will install around 1,750 megawatts of photovoltaic panels in 2011, which is enough to double last year's energy total and power 350,000 homes. The only disappointing news in the report is that residential solar use dropped 5.7% from the previous quarter. One of the key reasons for the explosion in solar power is the lower price of solar panels.

SOLAR WINDOW PROTOTYPE

New Energy Technologies has developed the first working prototype of its SolarWindow technology, which creates an electricity-generating coating for your windows. The obvious advantage of the translucent window coating is that you'll still be able to see outside while reducing the energy demands of your business. When sprayed onto a glass surface, SolarWindow can create enough energy to power artificial fluorescent lights. New Energy indicates it is also working with researchers to add SolarWindow to flexible, lightweight, and lab-scale plastic that users could apply to windows as a tinted film without altering the existing window architecture.

COST OF SOLAR PANELS FALLING

The DOE's Berkeley Lab releases a report annually that tracks the cost of photovoltaic systems. The report indicates that the installed cost of solar photovoltaic panels fell by 17% from 2009 to 2010. Even better, prices dropped an additional 11% during the first six months of this year. Oddly enough, the study also found that non-module costs, which include installation labor and inverters, also dropped in price by 18% from 2009 to 2010. The average cost of photovoltaic systems was between $6.30 per watt and $8.40 per watt, depending on the state, for systems less than 10 kilowatts. Systems smaller than 2kW cost much more, averaging $9.80 per watt, while larger systems (more than 1,000kW) had an average cost of only $5.20 per watt.

NEW SHAPE FOR LED LIGHT

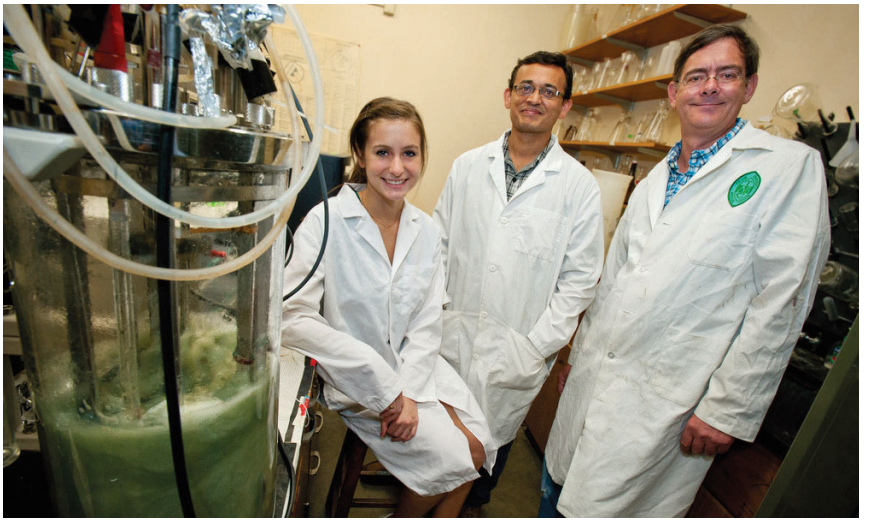
The Lighting Science Group has created an LED bulb that can mimic the BR (bulged reflector lamp) found in recessed lighting and drop-down lights. The Glimpse LED is free of toxic chemicals, including mercury, and can significantly reduce the energy use (by as much as 80%) of rooms—that use BR bulbs. The Glimpse also has a lifespan that's 25 times longer than that of traditional incandescent bulbs. The low profile allows the Glimpse LED to fit into most 5- or 6-inch recessed cans. For even greater energy controls, the Glimpse LED is dimmable down to 5%. The bulbs can also be surface mounted to work in a variety of environments.

GEL BATTERIES

A group of scientists from the University of Leeds have invented a gel that could replace the liquid chemical polymer in Li-Ion batteries, which is expensive to produce. Another benefit of the polymer gel is that it can fit into a thin, flexible film that can be cut into almost any size. The liquid polymer in Li-Ion batteries must feature two sealed containers, which prevents small sizes of batteries from being produced. The polymer gel can be made into a conductive strip that's only nanometers thick, and as an added bonus, it's safe and more tolerant of damage. The more affordable lithium batteries would also offer the same or better level of performance.

RENT AN ELECTRIC CAR

Hertz is now offering electric car options at two of its locations in San Francisco: the Airport Marriott Waterfront hotel and the Rent-a-Car office on Mason Street. Electric cars in the fleet include the Nissan Leaf and EV Smart Car. If you rent an electric car, you'll also enjoy the benefit of not needing to "refuel" the vehicle before you return it, because Hertz will recharge the electric car at no charge. The Airport Marriott Waterfront hotel has added two EV charging stations to the hotel garage, so that renters can recharge the electric car during their stay.



PAPER POWERED CARS

Researchers at Tulane University have found a way to use paper as a biofuel substitute for gasoline, which could subsequently lead to a good use for recycled paper. The ingenious form of power utilizes a bacterial strain called TU-103 that produces butanol from cellulose, which is an organic compound found in nearly all green plants. As such, it's the most abundant organic material on the planet. It is estimated that Americans throw out approximately 323 million tons of cellulosic materials each year. Currently, researchers are experimenting with old copies of the Times Picayune with success. Butanol is superior to the biofuel ethanol, because it can be transported through existing fuel pipe lines, is less corrosive, and contains more energy.

KEEP MOBILE DATA Confidential

Solutions For Staying Security-Savvy



Key Points

- Technology research firms predict that the mobile device market will continue to grow quickly in the next five years as more workers use personal devices to do everyday business.
- Not all attacks occur via malicious apps: phishing scams, network-based threats, and browser exploitation are all opportunities to take advantage of end users.
- Cloud data services and remote security software can protect lost, company-issued devices from creating new vulnerabilities in the network.
- When considering a mobile security solution, look for features such as corporate data wiping, multiple authentication options, and pre-cached encryption.

According to a recent report from Juniper Research (www.juniperresearch.com), the market for mobile device security software will skyrocket to $3.7 billion in the next five years. Why the investment? We can find one clue in IDC's Wordwide Quarterly Mobile Phone (www.idc.com) Tracker report, which projects that global smartphone shipments will reach 472 million in 2011 compared to $305 million for 2010. And by 2015, this number will graze $1 billion at a predicted $982 million total.

Puneesh Chaudhry, co-founder and CEO of Copiun (www.copiun.com), says there are numerous security challenges that result from our rapid adoption of smartphones and tablets. "Many of the security challenges arise because these devices are almost always personal," Chaudhry says. "According to Deloitte, nearly 75% of tablets and smartphones used in enterprises will be personal, a trend known as BYOD (bring your own device). Interestingly, according to Gartner, nearly 90% of corporations will be supporting the use of personal devices for corporate work by 2013."

In the "Lookout Mobile Threat Report" from August 2011, the company identifies the four danger categories mobile users must be more aware of: application-based threats, Web-based threats, network threats, and physical threats. Application-based threats typically attack mobile devices in one or more of the following forms: malware, spyware, the acquisition of personal info (privacy threats), and application vulnerability exploitation.

Not unlike Web-based computer threats, Web-based issues on tablets are generally linked to phishing scams, "drive-by-downloads" (automatic malicious downloads that occur when you visit a hijacked page), and browser exploits. No thanks to connectivity and communication avenues, network threats can infiltrate your device via Bluetooth, Wi-Fi, and SMS (Short Message Service) texts. Lastly, no one can overlook the consequences of personally losing a device or the intentions of a tablet thief who hopes to profit from what he finds on your mobile banking app.

As if we needed to convince you further of the necessity of a mobile security strategy, we'll dive deeper into mobile protection complexities with the help of some industry experts.

STATE OF THE MOBILE UNION

Mobile operating system developers are continually tweaking their application distribution model and the permissions granted for the roll out of new third-party patches. However, it's the mobile end user who must learn the practicalities of mobile safety.

"Many consumers have a false sense of security when it comes to their mobile device. While the impact of mobilization brings with it many opportunities, it also poses a new wave of concerns and challenges that the public must be educated on," says Heather Rutledge, product manager at Security Coverage (www.securitycoverage.com). "We know that organizations are becoming increasingly reliant on their mobile devices and combining their personal and professional uses, and hackers are taking advantage of this new era of information technology."



Corey Nachreiner,

CISSP and senior network security analyst, WatchGuard Technologies

"If your smartphone or laptop is lost or stolen, you want to make it as difficult as possible for the person that has it to gain access. Make sure to force a lock screen and teach your users to use strong passwords."

Rutledge cites that some of the common oversights that can result in a lost, stolen, or hacked phone, including the "lack of a wipe feature that will allow sensitive information to be deleted from the device in the event it goes missing" and "installing an app that contains malware without the protection of an antivirus application that can, at the very least, scan your phone to make sure the app is safe."

To put it plainly, mobile devices are just as vulnerable as the traditional laptop. They function as portable microcomputers that can now store thousands of emails, medium-sized files and other content important to the enterprise.

"Though many end users don't think of them this way, these devices are just as much 'computers' as your laptop is. Technically, these mobile devices suffer the exact same security issues as [laptops do]," says Corey Nachreiner, CISSP (Certified Information Systems Security Professional) and senior network security analyst at WatchGuard Technologies (www.watchguard.com). "However, in the past, attackers hadn't [taken advantage of] smartphone vulnerabilities as aggressively as they did laptop and computer vulnerabilities. Android seems to be the most targeted mobile OS by malware authors right

now." Nachreiner warns, "Researchers have found many different malware apps being shared via the legitimate Android marketplace."

Nachreiner adds that there are now Android Trojans that take full control of your device. In fact, he says, researchers recently discovered a botnet of Android devices that victimized 40,000 users.

Regardless of the bull's-eye that is centered squarely on the mobile platform, it's pertinent to consider the security measures that popular mobile operating system developers have already established so that download dread doesn't grip your mobile workforce. For instance, on the Android platform, users must approve a list of permissions to help identify if an app is authentic or untrustworthy. In addition, the Android Market user community is held responsible for keeping the app store lawful, in a sense.

With iOS, Apple set up perimeters so that third-party app data stays within the boundaries of its own program unless a user opts to receive push notifications or other alerts. The Apple Store also doesn't approve submitted apps unless they undergo the thorough review process based on the conditions instituted for iOS developers that encompass interface approval and content suitability.

SAFE PRACTICES & GOOD HABITS

Workarounds for increasingly complex security issues are not elusive. To be sure, the biggest mistake you can make is the simplest one: not securing your mobile device. Chaudhry offers some best practices for companies that want to take mobile data protection seriously. For instance, organizations can define policy controls for consumer devices before the end user connects to the network and gains access to corporate files. To prevent unauthorized entry into all network repositories, only allow mobile workers to search specific folders on their device. When employees share files across the network, ensure that they're not doing so via a consumer service. Hosting your own cloud storage for data exchange gives your IT department visibility of which files are moving where.

> "Using a trusted cloud-based service to keep actual raw data off the device is another great way that companies and individual users can protect their data."
>
> *Heather Rutledge, product manager, Security Coverage*

Rutledge says, "Using a trusted cloud-based service to keep actual raw data off the device is another great way that companies and individual users can protect their data. The cloud provides a secure way to ensure that data isn't lost should your device go missing or become infected. As always, making sure that you're using strong, unique, hard-to-remember passwords on all devices and logins is key."



Puneesh Chaudhry,
co-founder and CEO, Copiun

"Not all data is created equal. For example: while it may be OK to allow storage of sales collateral on the mobile devices, it may not be OK to store the entire price list."

Equally important is drive and file encryption, as Rutledge makes clear: "Make sure you're using programs that are encrypted to store your information. As mobile devices continue to make their way into our business and personal lives, people will search to find more ways to attack on the cellular level and retrieve our most sensitive information."

Nachreiner encourages the use of remote security servers as well as mobile management solutions. "All major mobile platforms have remote services that will allow you to remotely lock a device, or delete its contents. They also have GPS locating services that will help you find a lost or stolen mobile device. Furthermore, some vendors have started creating Mobile Management solutions that allow you to centrally manage these types of capabilities and more."

Speaking to the necessity of protecting fleets of mobile devices, McAfee offers its Enterprise Mobility Management software (free; www.mcafee.com), which is designed to block unauthorized devices, enable IT auditing, and simplify scalability of mobile device disbursement. With apps available for the iPhone, iPod touch, and iPad (plus support for other devices and platforms), end users can log in to McAfee EMM and securely connect to enterprise email, VPN, and Wi-Fi networks.

Ultimately businesses should treat mobile devices as though anyone might gain physical access to them, Nachreiner says. "That means, if you have critical, sensitive data on the devices, you need to encrypt it. That way if the devices end up in the wrong hands, they still can't gain access to your sensitive data."

LESSONS LEARNED

Implementing mobile security initiatives largely depends on your company's needs, budget, and culture, but if you're the one who makes the calls when it comes to safe mobile practices, don't hesitate to present the advice in this article to your colleagues and set a plan in motion to overhaul any inconsistencies in your mobile security policy.



Here, there and everywhere, on your PC, Mac® and mobile devices, you're plugged in to the things you love. With CloudStor, you're personally connected to up to **4TB** of self-owned storage, allowing you to freely access and share your favorite content with anyone, anywhere over the Internet, with **no fees**!

BUFFALO™
BuffaloCloudStor.com

Buy CloudStor. Available Now!

amazon.com Buy.com MICRO CENTER The Ultimate Computer Store newegg.com

Free apps for Apple®, Android™, BlackBerry® and Palm®.

©2011 BUFFALO INC. All rights reserved. BUFFALO and BUFFALO logo are trademarks of MELCO HOLDINGS INC. CloudStor and CloudStor logo are trademarks of BUFFALO INC. or its affiliates in the United States and other countries. Apple is a registered trademark of Apple Inc. Android is a trademark of Google Inc. BlackBerry is a registered trademark of Research In Motion Limited. Palm is a registered trademark owned by or licensed to Palm, Inc. Cloud Engines™ and Pogoplug® are trademarks of Cloud Engines, Inc. The Amazon.com logo is a registered trademark of Amazon.com, Inc. or its affiliates. The Buy.com logo is a trademark of Buy.com Inc. The CDW logo is a registered trademark of CDW Corporation. The Newegg.com logo is a registered trademark of Newegg.com, Inc. The names and logos of other companies mentioned herein belong to their respective owners.

ADVANCES IN Virtualization

More Choices Means More To Consider



Ten years ago, virtualization was implemented mostly by large enterprises. It ensured consistency, minimized IT support expenses, and maximized hardware outlay. SMBs frequently saw the technology as too complicated or expensive to use, and many had no knowledge of how virtualization worked.

Today, the landscape has changed radically as the development of cloud-based virtualization techniques and "virtualization in a box" systems have sprung to the fore. Dozens of firms (if not more) are promoting their products and services as "every man's" virtualization solution—workable even for companies with only a few employees.

The paradox is that even as SMBs are being lured into the virtualization marketplace, there are more options to evaluate. This can make it confusing—and potentially dangerous and wasteful—for firms to navigate a path.

ONE, TWO; MORE TO DO

At the most basic level, there are two virtualization options—server

Key Points

- Virtualization is being offered with numerous approaches, but none are one-size-fits-all solutions.
- Desktop virtualization can still be expensive for smaller firms, but traditional server virtualization has become very affordable.
- Cloud-based virtualization can be just as complicated as on-premise virtualization, depending on the firm's needs.
- Planning is still key to successful virtualization of any type and should not be overlooked.

or desktop. With server virtualization, multiple physical servers—for example, network, storage, and application servers—can reside as virtual servers, side by side but separate, on a single piece of hardware.

With desktop virtualization, one or more servers generate and deliver over the network a "snapshot" of a desktop environment (including the OS and applications) to notebooks, laptops, and even smartphones. The snapshot may be stored locally (depending on the operating model), but the recipient computer no longer operates as a completely self-contained unit. This enables multiple individuals to share the resources of a single server.

Traditionally, virtualization options have been implemented and managed at the company's location by outsourced or in-house IT experts. After a lengthy planning and preparation session, implementation of a specialized software platform results in one or more servers hosting multiple virtualized environments. We'll categorize both these methods as Traditional Virtualization.

The traditional model has been expanded now with a plethora of simplified solutions where companies purchase "pre-baked" solutions for virtualization. The effect—dividing a single, on-premise server into multiple virtual servers or desktop environments—is the same, but the process is designed to be streamlined. We'll call this Express Virtualization.

Another model is for firms to have their virtualized environments hosted (or at least facilitated by) offsite servers. In some scenarios, a firm's servers are replaced with virtualized space on a public, cloud-based server, minimizing the expense and required maintenance and upgrades. The virtual environments are then served to the firm and its employees via an Internet connection.

However, some models employ private (dedicated) cloud servers, and others move only the processing and virtualization functions to the cloud, where they return it to the user. We'll call all these methods Cloud Virtualization.

TRADITIONAL VIRTUALIZATION

Server virtualization has its roots in the 1960s when companies wanted to run, simultaneously, multiple apps and processes on one mainframe computer. Desktop virtualization came later, when a company called VMware introduced its virtual desktop infrastructure (VDI) in 1999 as a response to skyrocketing desktop maintenance costs. For many firms, there is still confusion about the difference between the two. That causes some SMBs to operate under misconceptions, says Neil Matchan, Director of IT Services for Atlanta-based IT provider InterDev.

"For [traditional] VDI, you need a very large deployment. It doesn't make sense for 30 to 50 workstation environments. For big companies, when you divide out the cost of server infrastructure, the cost per seat becomes very small. Desktop support costs also go down dramatically. For fewer than 100 workstations—and especially fewer than 50—it's harder to justify the hardware costs, per user."



Neil Matchan,

director of IT services, InterDev.

"The cost of hardware and storage has decreased so much that it is cost effective for SMBs to virtualize their servers on-premise."



Clint Guillot

founder of Xenir Technologies

"Every point-and-click vacuuming tool works 40% of the time. The other 20% of the time, they fail...with some error that can be fixed manually. The last 40%, they fail in insidious ways."

For server virtualization, he says, the situation is different. "The cost of hardware and storage has decreased so much that it is cost effective for SMBs to virtualize their servers on-premise," Matchan says. "We see small companies, hit hard by the recession, that have out-of-warranty servers on their last legs. For $2,000 they can get a new server with a quad-core processor, 16GB of RAM, and nearly a terabyte of storage. In half a day . . . seasoned tech[s] can migrate their existing servers to virtualized environments on one new server. They can then manage that server with minimal IT support. The cost savings is dramatic."

Clint Guillot, founder of New Orleans-based IT services firm Xenir Technologies, says the savings are even greater for medium-sized firms. "There is no reason everything most businesses have cannot fit on two big, beefy servers, which they can purchase for $6,000 to $8,000 apiece," he says. "The reduction in servers also means fewer ancillary devices, like backup hardware, uninterruptable power supplies, and network gear. The savings by eliminating extra add-ons can be almost as much as the server itself."

EXPRESS VIRTUALIZATION

Express virtualization solutions, especially those designed to streamline VDI implementation and make it affordable for smaller firms, are popping up with increasing frequency. The experts with whom we spoke said companies should approach these types of solutions with caution. "The concept is very attractive in many ways, but when you get down to the nuts and bolts, it is not as economical as it first appears," Matchan says.

One issue he says catches small companies by surprise is licensing restriction. "A small company with 24/7 operations might want to create three virtualized desktop environments—one for each employee on a shift—on a single desktop."

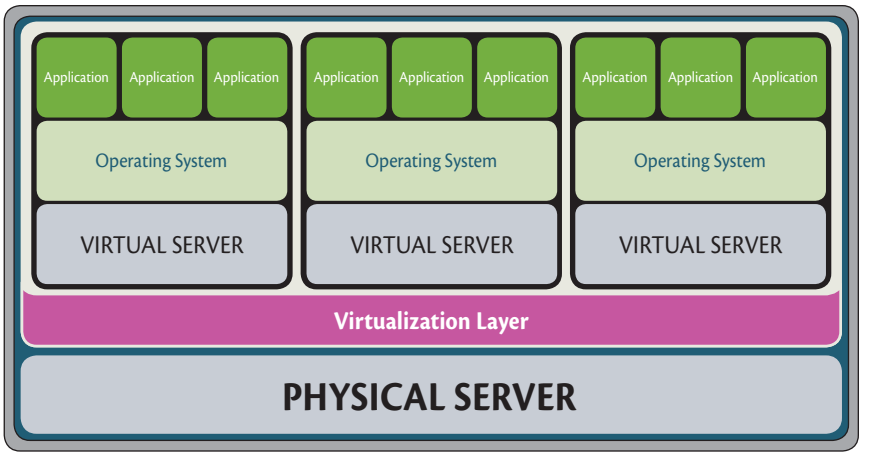
Guillot says streamlined server virtualization solutions also have caveats. "You can certainly do the basics

of getting started yourself, but if you get into a pickle, you still need experts to get you out of problem situations."

One example he cites is that "point-and-click" solutions usually default to creating the server image (the universe of files, drivers, etc. for that particular server) as a single file on the physical drive. "By default, these files are not limited in size. You start creating more and more virtual environments on the server, and they start growing. The hard drive starts running out of space, but the guest operating systems are not savvy to the fact that the hard drive is full. Everything starts melting down in very ugly fashion."

This can be avoided, he says, by creating multiple static (permanent) disk partitions and assigning one virtual environment to each. "When you set up a partition, then the guest operating system knows the limits it can write to," says Guillot. If the company implementing the streamlined solution isn't using a knowledgeable IT person, they may not know to do this.

Guillot also references what he calls "vacuuming tools," which are supposed to automate the process of migrating an existing server to a virtual environment. "My experience is that every point-and-click vacuuming tool works 40% of the time," he says. "The other 20% of the time, they fail right off the bat with some error that can be fixed manually. The last 40% of the time, they fail in insidious ways that you don't discover until later, when they can cost thousands of dollars to fix."



Virtualization takes one physical server and creates multiple divisions within which entire, separated virtual servers can reside.

CLOUD VIRTUALIZATION

Matchan cites cloud virtualization as a good solution for many firms of up to 30 to 35 workstations. "We find cloud virtualization works especially well for 8- to 10- person professional services firms running primarily Word, Excel, and email applications."

However, he notes, even small companies may have mission-critical "killer apps"—programs that for some reason (maybe they require high bandwidth, video cards, or special drivers) won't work on standardized cloud server environments. "Once you get into customized cloud apps, you can no longer share a server or resources with other clients and you need a dedicated server. The cost often does not work out, especially for smaller firms," he says.



Mikael Lirbank
founder and CEO, WitsBits

"You can virtualize your own servers, or you can virtualize machines you have at an Internet Service Provider or on a rack at a data farm."

Matchan says outdated peripherals can also cause problems that are not easy to resolve. He cites an example of one customer that still used a dot-matrix printer (a decades-old technology) to print on glue-backed labels that would ruin laser printers. It required drivers and other support not available from public cloud servers. "For them to use it in a cloud virtualization environment, users would have to send the print request to the cloud server and then have it come back to a local machine connected to the printer. That's not an efficient solution."

Mikael Lirbank, founder and CEO of WitsBits, says some firms (his was the first) move a company's virtualization processing, storage, and management functions to the cloud, but have their own servers continue to perform some local application hosting. "You can virtualize your own servers, or you can virtualize machines you have at an Internet Service Provider or on a rack at a data farm," he says. "You get one management console for everything."

Lirbank asserts the advantage to an approach like this is the unified, cloud-based dashboard that makes it easier to make changes. "If you tie yourself up with one cloud provider and they increase the pricing, it's not easy to migrate elsewhere," he says. "If you have a separate management console to access all your resources, it's easier to move things around."

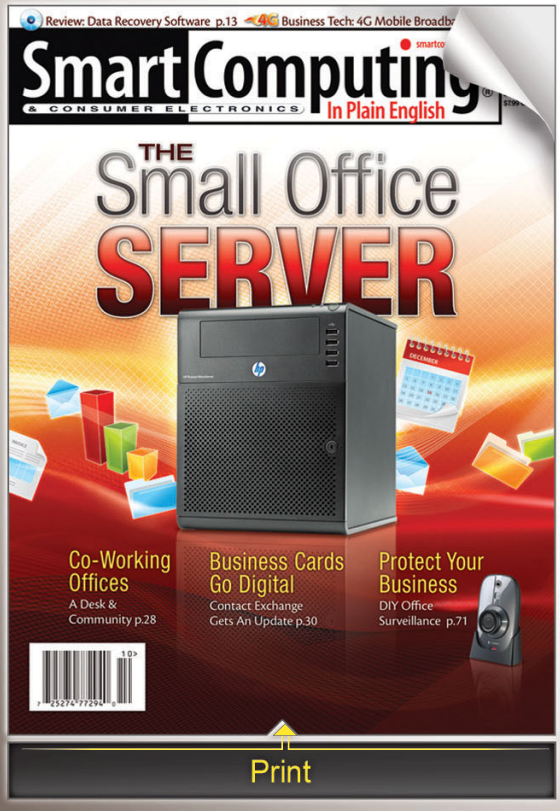
VIRTUES OF VIRTUALIZATION

Our experts agree any of these models can work in the right situation, but that costs rise—and problems like poor performance and resource allocation issues crop up more frequently—when the solution is not matched with the need. "A big part of a traditional virtualization deployment is planning, and nothing can negate the need for that step," Matchan says.

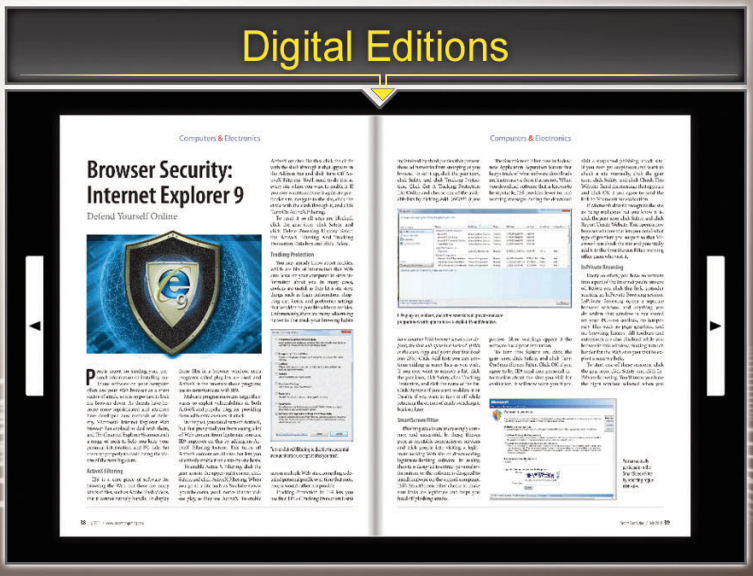
The Tech Info You Need, In Plain English

You don't need to be an IT guru to buy and maintain computers and gadgets for your home or small office. *Smart Computing* keeps you up-to-date with plain-English articles that explain new technology and define technical terms. Each issue includes news, tutorials, and step-by-step troubleshooting guides.

More than a typical magazine, *Smart Computing* is a reference tool. Benefit from the years of tech support advice archived on our Web site as well as access to our Digital Editions from any Internet-connected PC.







SmartComputing
In Plain English
Call (800) 733-3809 to subscribe!
WWW.SMARTCOMPUTING.COM

Mobile Web Or Mobile Apps?

Which Mobile Model Should You Pick?

While the world economy spent much of 2008 in decline, the mobile application space grew by 146% from the prior year, reaching nearly 1 billion downloads, according to industry analysis firm MarketsandMarkets (www.marketsandmarkets.com). MarketsandMarkets expects a nearly 30% compound annual growth rate for mobile apps, ballooning to a $25 billion market by 2015.

While this growth may look stunning, mobile apps are only part of the mobile software scene. No less important is the mobile Web, meaning Web sites optimized to run on ultramobile devices, especially phones. The mobile Web has been around since the stark days of text-based WAP browsing, but today's interfaces essentially mirror conventional, graphics-rich Web sites, only with fewer pixels. This has left both developers and users with a potentially tough decision . . .

MOBILE APPS OR MOBILE WEB?

According to Rob Enderle, principal analyst at Enderle Group (www.enderlegroup.com), the answer is predictable: It depends.

"How secure do you want the information to be, and how prevalent is the wireless connection to the device?" asks Enderle. "Generally, the user experience will always be better with a local app, but you have to develop for the platform. Doing that for Android alone can be daunting—because it is relatively fragmented—let alone the other OSes. Web is much easier to do, and if you do it right, potentially more secure because the data doesn't reside on the device."

The downside of Web apps, notes Enderle, is that they require a stronger connection, and Web apps don't necessarily work equally well across all phone platforms with their differing browsers. The Web approach certainly won't allow for optimization for specific models. As a general rule, unique or niche applications will likely favor a native, app-based approach while simpler and/or more generic solutions will gravitate to the mobile Web.

Developers often echo this sentiment. Josh Alner, business development for mobile application vendor Killer Mobile (www.killermobile.com), maintains that what he calls "native mobile apps" (which comprise 100% of Killer Mobile's business) are faster, more powerful, and offer the potential for much greater sophistication. Because native apps don't rely as much on radio communications, they're also less demanding on power, thus aiding battery runtime.

> "With Web apps, you can hardly scratch the surface as to what device features you can access, although this is certainly changing," says Alner.

"And while, yes, Web apps can now access elements such as location, and there's even click-to-call possible, some things you simply cannot do in a Web app. For example, our Call & SMS management applications [for automating users' call/messaging responses] are something that will never be possible through a Web app."

WHICH PLATFORM?

Perhaps the choice can be made easier by examining current market trends. As recent data from VisionMobile (www.visionmobile.com) illustrates, of the top eight mobile platforms being leveraged by developers, five are gaining in "mindshare." (The report doesn't note if the release of Windows Phone 7 influenced Microsoft developers.) This reflects that while there are pockets of erosion within the mobile world—Symbian being the most dramatic—the rising mobility tide is lifting most boats, and lifting mobile Web most of all.





An August 2011 IDC (www.idc.com) report echoes VisionMobile's data. Analysts found that 91% and 88% of developers surveyed were "very interested" in the iPhone and iPad, respectively. Developer mindshare for Android phones climbed to 87% and Android tablets to 74%; HTML 5 mobile Web debuted on IDC's list at 66%. All other players came in at 30% or less. "The new addition of mobile Web in the middle of the pack suggests developers are seeing the increasing requirement for both a mobile app and mobile Web site, though the former continues to be the No. 1 priority," IDC reports.

IDC also raises an intriguing point. The line between traditional native apps and their Web alternatives is gradually blurring. Twitter is a good example. The social networking app may run natively on phones, but its constant communication with servers in order to deliver real-time updates almost makes it a cloud app. Locality awareness and other factors that demand constant updating place similar native-plus-Web demands. It may prove that the question of one or the other turns out to be "both."

COST FACTORS

This year, cellular carriers in the United States are signaling the imminent demise of flat rate data plans. The implications of this for data-heavy Web apps are ominous. Unless there are surprising advances in compression or more Web apps evolve to only update on demand rather than stream continuously, it's likely that native apps will gain more share.

Another cost element lies in development. For companies needing to build their own apps, the Web may offer a much more expedient route to project completion. Tyler Lessard, vice president of global alliances and developer relations at Research In Motion (www.rim.com), points out that Java offers a rich programming environment for the BlackBerry, but very few SMBs have the resources to write their own Java apps, never mind port the same app over for iOS and Android. In contrast, smaller companies may have one or more people fluent in Web programming and HTML tools.

"You already have people who know how to build Web-based applications," says Lessard. "They can keep doing that, only now they're optimizing the interface for a mobile device. It then becomes a matter of figuring out what are the few things users want to do from their mobile phone and really emphasizing those features on that screen size."

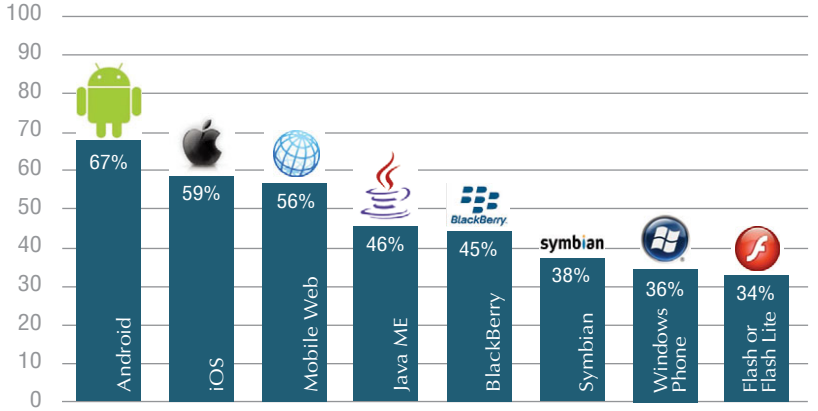
Alner agrees with Lessard, stating that, "Building for native mobile is not as simple as building a Web site; 95% of people who build Web sites are not going to be able to make the transition to doing mobile apps."

Metodi Filipov, managing director for mobile software developer Bianor (www.bianor.com), concurs, noting that, all other things being equal, mobile computing on the device rather than from the Web is preferable. Unfortunately, in this time of consumerizing IT and bringing consumer devices into the workplace, most apps need to function across at least the top three platforms. Filipov notes that, from initial planning to final validation, an average custom app will cost roughly $25,000 just for one phone platform. Ultimately, the general rule is that a Web application will be cheaper, and a well-done Web app will likely be better than a native app thrown together with insufficient funding and half-baked project planning.

It's important to compare both options and know what you're giving up by choosing the cheaper path, says Enderle. "That way, you have the information to ask for more funding. Otherwise, you'll likely always take the cheaper approach regardless of whether the more expensive one is worth the extra money."

DEVELOPER MINDSHARE

As of 2011, mobile Web development now ranks a close third behind Android and iOS, signaling that the market favors both Web and app models.



SOURCE: VISIONMOBILE DEVELOPER ECONOMICS 2011



Online & Mobile Productivity Tools

USE COMPUTERS SMARTPHONES & TABLETS IN HARMONY

Making sure your employees are productive and that your company runs as efficiently as possible involves a combination of office-based and mobile solutions.

Employees must be able to communicate with each other easily; set up meetings and conference calls; and know that everyone is on the same page so projects are completed on time. To help overcome these challenges, there are online offerings and mobile applications that open up lines of communication and keep productivity at a maximum.

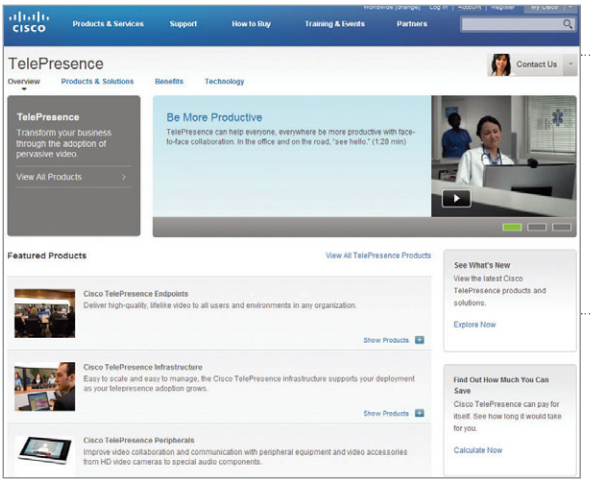
FOR YOUR COMPUTER

Computer software is often the backbone of many companies in terms of the productivity tools software provides to their employees. But there are many more solutions out there that can either be stored on a computer as software or accessed via an online portal. These solutions range from private, company-only email and instant messaging applications to videoconferencing and VoIP systems. The key is connecting all of these tools to the Internet so they can be accessed anywhere.

One of the most popular productivity tools today is online videoconferencing. This allows for employees to meet face-to-face when they are in separate offices or even in different countries. The combination of high-quality audio and video mixed with the ability for enhanced presentations makes videoconferencing a personable alternative to email messages or conference calls.

Cisco (www.cisco.com) is a leader in the field of videoconferencing and computer-based meeting solutions. The company's TelePresence product line is full of online tools that make setting up and conducting meetings simple and intuitive, as well as the infrastructure needed to use the service.

Solutions such as this can be used throughout the company, regardless of whether users are in the same building or in remote branches. Cisco's TelePresence, for example, isn't limited to use on computers. You can also access it using Cisco's Cius tablet; as long as you have a Wi-Fi or mobile data connection, you can get many of the same features as the full office version, including HD video and more.



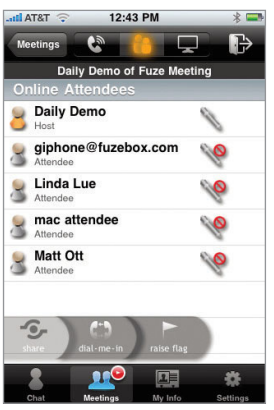
Cisco's TelePresence service lets employees communicate with each other no matter where they are. Features include high-quality videoconferencing, live collaboration, and much more.

FOR YOUR SMARTPHONE

Because smartphones are now basically extensions of employees and often necessary for conducting business, it's important that they include tools similar to those available on computers. The more obvious word processing, spreadsheet, calendar, and note-taking apps are all great business tools, but when it comes to productivity, you should also think about mobile meeting apps.

If you frequently conduct meetings, you know how difficult it can be to round up the necessary attendees and make sure everyone is available at the same time. Many employees are regularly traveling and away from the office, some are in separate branches but still need to be present, and others may step out of the office just before an important meeting is held. The only way to bring all of these people together is to have mobile applications that let multiple devices communicate with each other.

Fuze Meeting from FuzeBox (www.fuzebox.com) is an example of a meeting and collaboration app that works across multiple devices. It is available as an online, computer-based solution as well as a smartphone/tablet app for Android, BlackBerry, and iOS. Fuze Meeting assigns one person as the meeting presenter and lets them gather necessary attendees; share videos, images, and other media; and conduct an audio meeting with Fuze user, regardless of device. Fuze Meeting also lets users exchange secure, encrypted text messages during meetings.



Fuze Meeting allows companies to connect PCs, smartphones, and tablets and conduct audio meetings. But the meeting presenter can share high quality video and images as well.

The Fuze Meeting mobile apps cost nothing to download, but the service is not free. Pricing ranges from $9.99 per day for the Meeting By The Day plan, which supports 15 attendees and 1GB of storage, to $69 per month (or $828 per year) for the Pro plan, which supports up to 100 attendees, unlimited storage space, and a Webinar feature. The Pro and middle-of-the-road Plus plans also provide unlimited meeting recording and site branding. FuzeBox also offers a free trial.

FOR YOUR TABLET

Many of the same apps, productivity and otherwise, that are available for smartphones are also available for tablet computers. As tablets become increasingly capable of handling more intense apps, however, there are more and more productivity apps specifically designed to take advantage of tablets' processing power and larger screen sizes.

Citrix GoToMeeting (www.gotomeeting.com) is a well-known online meeting service that includes video and audio conferencing, meeting recording, and presentation integration, among many other features. In addition to a mobile GoToMeeting app for smartphones, there is an iPad version that lets users attend meetings, contribute via the iPad's built-in microphone or by connecting to the meeting via phone, and view presentations in their entirety. There is a computer requirement for using GoToMeeting, however; the organizer of the meeting must be using the newest version of GoToMeeting on their computer in order to start the meeting.

The GoToMeeting app is free for Android, BlackBerry, and iOS devices. But you'll need a GoToMeeting account to use the service; $49 per month or $468 per year allows for up to 15 attendees at a time, videoconferencing, and more. A 30-day free trial is also available.

A HARMONIOUS GROUP OF DEVICES

Computers, smartphones, and tablets are powerful on their own, but when you harness them to run the newest business and productivity apps, they are able to do much more for you and your company. And if you can use these devices and apps in unison to let your workforce communicate and collaborate, productivity and efficiency are sure to increase.

NEW For Your Tablet

The Latest Software & Updates



The tablet market and, along with it, the market for tablet apps are growing each day. With your busy schedule in mind, we scouted the app stores and compiled a list of some of the most important and useful apps, tablet OS updates, and app tweaks.

PHATWARE UPDATES WRITEPAD TO VERSION 5.3

The iPad app WritePad ($9.99; www.phatware.com), which recognizes your handwriting whether you're using a stylus or your finger, received several updates in the 5.3 version. The developer incorporates a new command that makes it possible to import new words from your calendar and contacts to the dictionary, which will enhance the aptitude of WritePad's handwriting recognition whenever you enter those words. You can now import new words from a document you're working on to the dictionary, as well. In Keyboard mode, you can now disable the word autocompletion tooltip. There's also a new option that lets you deactivate URL, phone number, and email address recognition in text documents.

BETA CITRIX RECEIVER NOW AVAILABLE FOR BLACKBERRY PLAYBOOK

The Citrix Receiver beta is virtualization software that allows BlackBerry PlayBook (www.rim.com) users to gain access to virtual desktops such as Citrix XenDesktop. End users who work on hosted applications can open server-based Windows software, SaaS (software as a service), and Web apps. The program also allows for multitasking, letting users work between two or more virtualized apps and desktops within the app itself. According to RIM, this multi-tabulation mimics the way you can navigate on the PlayBook browser. Users need only sign in to a single access point when the app launches instead of entering their login info each time they open Windows, Web, and SaaS apps. IT admins will appreciate the control over the Citrix Receiver via a hosted app server. Mobile workers can also pair the PlayBook with peripherals, connect it to an HD display, and view their remote apps on the desktop. You can download the free test version at tinyurl.com/3w9gd4q.

WACOM UNVEILS BAMBOO LINE OF CREATIVITY TABLETS

Wacom (www.wacom.com) recently announced the release of three new tablets under the Bamboo moniker

that are designed for tablet users with varying skillsets and hobbies. The Bamboo Connect ($79) is for SOHO visually oriented communicators; the Capture ($99) is best for photographers and newbie designers; the Create ($199) is suited for those who want "more freedom of movement when making broad pen, pencil, or brush strokes on the tablet surface." Each tablet is meant to be used exclusively with a tablet pen (a battery-free, cordless stylus) and the Capture and Create support multitouch input. With the Bamboo Connect you'll get the Autodeck Sketchbook Express creative software for sketching and painting. You'll be able to use the Capture with Adobe Photoshop Elements. Moreover, the Create comes with Corel Painter Essentials.

NEW ASUS EEE PAD SLIDER COMES WITH BUILT-IN QWERTY KEYBOARD

Running on the Android 3.1 (aka Honeycomb) OS and Asus' Waveshare UI, the Asus Eee Pad Slider (www.asus.com) form factor attempts to alleviate the discomfort of typing on a standard tablet interface by including an attached, slide-out QWERTY keyboard. The wide 178-degree viewing angle and Supreme Surround Sound audio make the Eee Pad Slider a very capable multimedia tablet. In terms of specifications, the tablet features a 10.1 LED display (1,280 x 800), Nvidia Tegra 2 chip, up to 32GB of storage, eight hours of battery life, and dual cameras—1.2MP on the front panel and 5MP on the back panel. In addition to support for Adobe Flash, the Eee Pad Slider features the following proprietary apps: ASUS Launcher, MyLibrary, MyNet, MyCloud, File Manager, Kindle Books, Zinio Magazine, PressReader, and Polaris Office 3.0.

SAMSUNG ANNOUNCES RELEASE OF GALAXY TAB 8.9

Billed as one of the thinnest mobile tablets on the market with a thickness of less than half an inch, the Galaxy Tab 8.9 (www.samsung.com) is a sister tablet to the Galaxy Tab 10.1, because it shares many of the same capabilities and features. Boasting the TouchWiz UX interface, the latest Galaxy Tab features the Live Panel widget, Mini Mode Tray for frequently used apps, Clipboard with copy and paste item storage, Indicator Quick Panel (notifications and settings), and Photo Editor. The Tab 8.9 is also heavy on content accessibility thanks to the inclusion of the following services: Samsung Media Hub, Music Hub, Readers Hub, Google Mobile, AllShare, and Mobile Printing. This Android 3.1 tablet is a Wi-Fi only model, includes 16GB of internal storage, and features front (2MP) and rear (3MP) cameras.

ARCHOS OFFERS THIRD-GENERATION G9 INTERNET TABLETS

Archos is now selling two G9 Internet tablets in 8-inch and 10.1-inch versions. The Archos 80 G9 ($299.99; www.archos.com) multitasks with the 1GHz dual-core Nvidia Tegra 2 processor, and the Archos 101 G9 features the 1GHz ARM dual-core Cortex. Both models provide 250GB of hard drive storage and operate with Android's 3.2 platform. You'll also get built-in GPS, a 720p front-facing Web cam, HDMI output, and a maximum of 10-hour battery power with either model.

SKYPE UPGRADES APP FOR ANDROID

Skype recently announced version 2.5 for Skype For Android (www.skype.com). The update offers Skype compatibility with 14 additional devices (such as the Samsung Galaxy Tab 10.1 and Motorola Xoom, plus other Nvidia Tegra2 devices) and front camera video calling on certain models that use Android 2.2. Also, in addition to now being able to rotate and zoom in and out when you're video calling, you can make calls in both portrait and landscape mode. In the message history, you should notice that Skype now merges instant messages, calls, and other communication in the same way you would see it on Android for Windows or Mac. Advertisements will now appear in the contact and recent lists if you're a nonpaying user. Other improvements include support for Bluetooth headsets, updated emoticons, and general upgrades for IMs and call joining.

MOTOROLA XOOM IS READY FOR 4G LTE CONVERSION

Thanks to Verizon Wireless (www.verizonwireless.com) and Motorola Mobility (www.motorola.com), the 4G LTE upgrade is now available for the Xoom, which means customers can either buy a new 4G LTE device for $499.99 (plus a two-year contract) or send their Xooms (backed up and encrypted) to Motorola. If you ship your model to Motorola, it will return with a free 4G LTE update within roughly six business days. Users can expect faster connections and download speeds of 5 to 12Mbps and downloads that take between 2 and 5Mbps. You won't stay connected to 4G LTE when you roam outside the new coverage area, but you will still be able to connect to the Verizon Wireless 3G network. To read about how to prep your Xoom prior to mailing it for the upgrade, go totinyurl.com/3nz42vm.



Wacom now offers three new multimedia- and design-oriented tablets in its Bamboo line: the Connect, Capture, and Create.

NEW For Your Smartphone

The Latest Software & Updates

You probably rely on your smartphone for many things, but with new software and updates, you can improve both the efficiency and functionality of your mobile phone. Here, we'll detail the most popular newly released software and key updates to help you maximize your smartphone's ability to help you when you're on the road.

NEW FOR ANDROID

To protect your Android phone, Trend Micro released its Mobile Security Personal Edition ($29.99; www.trendmicro.com). The app can block virus threats that can infiltrate your phone while you surf the Web, make calls, or send texts. For secure Web browsing, Mobile Security Personal Edition checks every Web site against Trend Micro's reputation database. Additional new features include an app scanner, which is designed to prevent infected apps from installing and stealing your personal information. You'll also benefit from Lost Device Protection that gives you the ability to locate a lost Android phone.

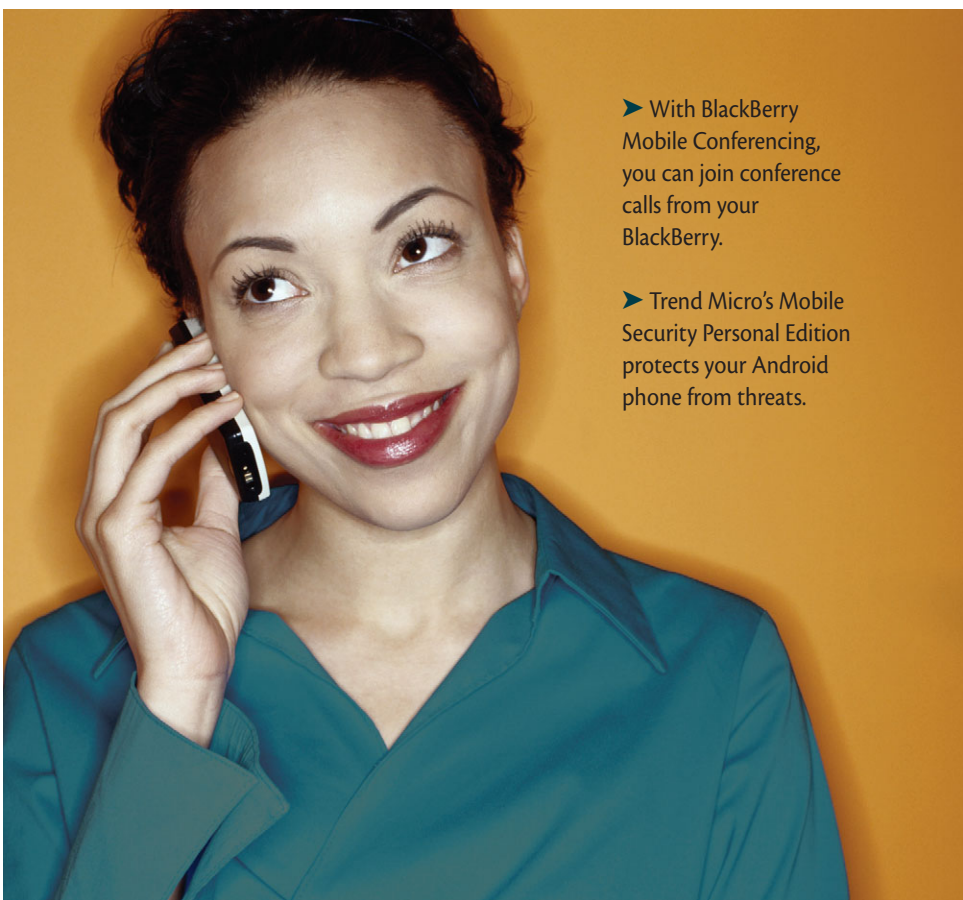
Goodreads is a Web site (www.goodreads.com) that lets you keep track of the books you've read and those that you are interested in reading, and connect with other book lovers to discuss their reading choices. The Goodreads app (free) lets you access your local library and read Goodread reviews, so you can make an informed choice when deciding what to read next. You can also view your online friends' reading updates and search the Goodreads catalog.

NEW FOR BLACKBERRY

SmrtGuard, a mobile security vendor, announced that its Personal Guardian app (smrtguard.com) is now free. Users can configure a key that, when pressed for three seconds, will silently trigger an emergency call to 911 (or any other number), as well as send out an email, text, or Twitter message that notifies others of your GPS location and alerts them that you need help.

BlackBerry Protect (free; www.blackberry.com), now a formal service from RIM, lets you lock, locate, and remotely wipe your BlackBerry from a PC. You can also automatically back up (daily, weekly, or monthly) the crucial data on your phone. Should you lose your phone after registration, just log on to www.blackberry.com/protect and you can locate your phone on the map. You also can display a message that tells the finder how to return the phone. If you think you've just misplaced your phone, you can force it to ring loudly.

RIM also released BlackBerry Mobile Conferencing (free), which works with your company's existing conferencing system to schedule, join, and rejoin conference calls via your BlackBerry. The app integrates with BlackBerry's Calendar, so you can bridge personal conference details. The Join Now feature sends a notification that will allow



➤ With BlackBerry Mobile Conferencing, you can join conference calls from your BlackBerry.

➤ Trend Micro's Mobile Security Personal Edition protects your Android phone from threats.

you to join the conference, which means you won't need to dial long-distance telephone and access numbers. There's also a convert email tool that lets you schedule a call that includes all the people in an email thread.

Does it seem like your BlackBerry's battery depletes too quickly? Set up Battery Watch (free; www.s4bb.com) from S4BB Limited to send out audio notifications when your battery drops below a given level; that way you can turn off power-hogging applications if you'll be away from an outlet for a period of time. Those attempting to find when the battery is most expended will like that Battery Watch offers a line chart visualization that shows the battery status over a given timeframe.

NEW FOR IOS

The Full Control ($0.99; fullcontrol.cescobaz.com) app from Francesco Burelli store's keyboard shortcuts on your iPhone, so you can remotely control your Mac. Standard system controls include volume, keyboard, and trackpad, as well as the ability to launch any application located in the Applications folder. Media controls are also available so you can play, pause, fast-forward, skip, and repeat a song. You can save your favorite commands and have them quickly available with a single touch.

If you're trying to figure out if it is cheaper to fly or drive to your destination, check out Cost2Drive ($1.99; cost2go.com). The iPhone app figures out the cost of driving by taking into account the type of vehicle you drive, current gas prices in the area, and distance. To figure out the cost of flying, Cost2Drive polls the Kayak travel Web site for flights to the same destination. Then, you can compare the cost and time differences between the two modes of travel.

mSeven Software updated its Password Manager ($6.99; mseven software.com) to version 3.0. The app uses 256-bit Blowfish encryption to secure most any type of data, such as account numbers, passwords, email accounts, combinations, and other information. New features include support for Dropbox Cloud Sync, which lets you securely sync data over standard Wi-Fi connections. Another new feature is the ability to share records through email, SMS, or the iPhone's clipboard.



NEW FOR WINDOWS PHONE 7

To help you keep track of the places you've been, Microsoft released Microsoft Scrapbook (free; www.microsoft.com) for Windows Phone 7. Scrapbook keeps a history of the places you've checked in using Bing's Maps feature on your Windows Phone 7 device. The tool is ideal for travelers who want to remember a nice restaurant or potential clients they'd like to visit in the future.

Evernote (free; www.evernote.com) announced version 2.0, which adds the ability to pin notes, tags, map locations, and searches to the Windows Phone 7 home screen. The note-taking app lets you easily add audio memos and images to help you keep details on hand. Other new features include improved social integration and improved search tools.

With Handyscan ($2.99; jdbp.mobi), you can use the camera in your Windows Phone 7 device to scan paper documents, whether they be contracts or newspaper articles. JDB Pocketware released version 3.0, which includes a new cropping tool with skew corrections, the ability to send files to Dropbox, and a variety of performance improvements. You can import and export images from your pictures library hub or send documents via email for easy reference on a work or home PC.

NEW FOR MULTIPLE PLATFORMS

Code 42 Software released its CrashPlan (free; www.crashplan.com) and CrashPlan PRO backup (www.crashplan.com) apps for iOS and Android. The services offer secure access to backed up files from a computer associated with the account's CrashPlan subscription. You can view downloaded files within the app and share them with clients or colleagues via email.



Week Calendar

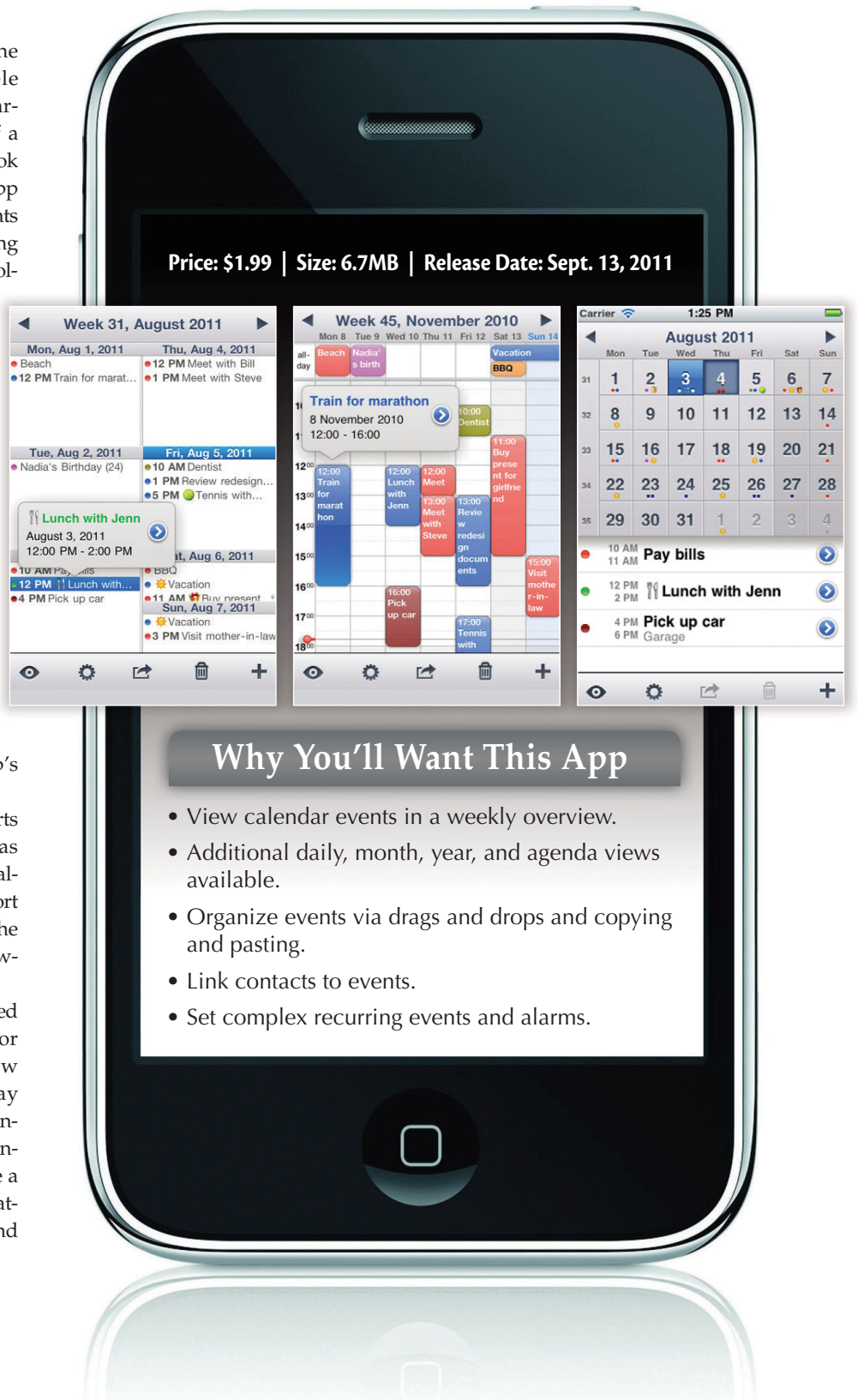
View & Manage Your Life's Events

If you're someone who finds the default calendar app available on the iPhone to be lacking, particularly the calendar's omission of a weekly view, you'll want to take a look at Week Calendar, a highly rated app that provides just such a view of events you have scheduled for the upcoming seven days. In addition, through a colorful, stately interface, the app also provides what developer UtiliTap states are "better list, day, week, month, year, and agenda" overviews that users can fully utilize through full touch gesture support.

Suitable for any type of user but arguably ideal for business users, Week Calendar is jam-packed with features useful for organizing and working with events. These include the ability to organize events via simple drags and drops and copying and pasting. Elsewhere, you can batch edit events, as well as color code them based on keywords, apply one of 17 actions to events from the app's menu, add appointments, and more.

In terms of syncing, the app supports such iPhone-supported calendars as MobileMe, Outlook, iCal, Google Calendar, Exchange, and CalDAV. Support for searches is also included, as is the ability to hide weekend dates and viewing the calendar in landscape mode.

The latest version adds a redesigned monthly view that displays dots for events that users can swipe to view corresponding details. A new Day view provides three layout options, including the ability to only display non-empty hours, show all hours, and use a classic view. Week Calendar is compatible with the iPhone, iPod touch, and iPad and requires iOS 4.0 or later.



IPHONE APPS



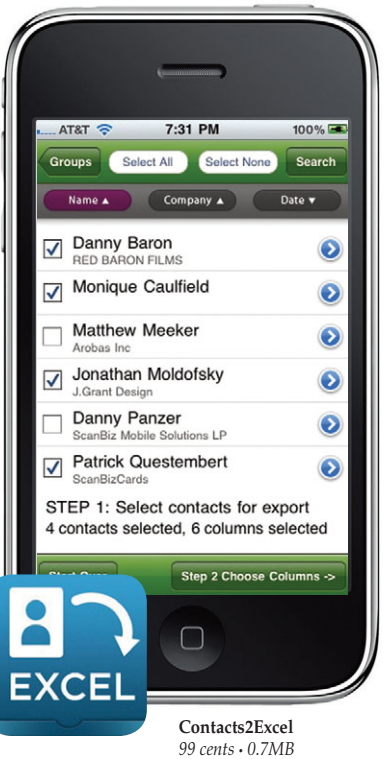
AppTrack
$3.99 • 5.6MB

AppTrack (Rel. May 10, 2011) is a data visualization tool from publisher Robert Johnson that lets apps developers/publishers view their performance complete with statistics via graphical representations presented on an iPhone or iPad.



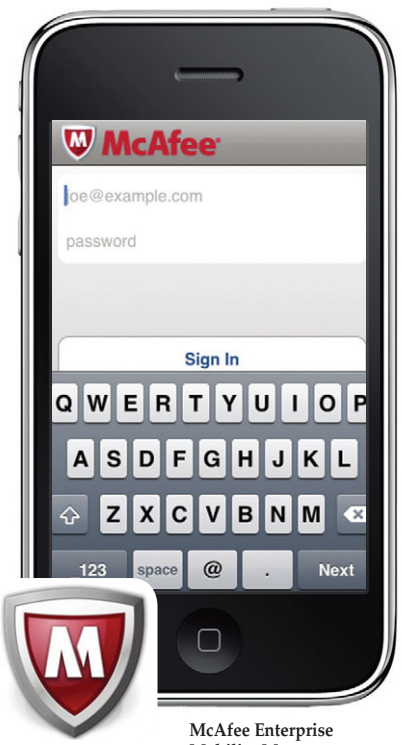
Undock
$4.99 • 1.6MB

Stature Software's Undock 1.0 (Rel. May 3, 2011) provides access to project management sites within the app without having to log into numerous sites or install apps. Basecamp, Bugzilla 3.0+, CounterSoft Gemini 3.1+, and Jira support is included.



Contacts2Excel
99 cents • 0.7MB

As it name suggests, Contacts2Excel (Rel. July 8, 2011) from ScanBiz Mobile Solutions lets users create an Excel spreadsheet consisting of any or all their contacts. Exporting to CRM apps is supported, as is controlling which spreadsheet properties to include.



McAfee Enterprise Mobility Management
Free • 0.5MB

McAfee Enterprise Mobility Management (Rel. June 20, 2011) helps ease the connection of an iPhone, iPod touch, or iPad to existing enterprise services.



DataPlotter
$3.99 • 1.4MB

Mobile Black Belt's DataPlotter (Rel. July 18, 2011) lets you collect and analyze process data findings "within seconds" and share them. Measure customer requests or track units exiting a business.



ReadyGetSet 1.01
$69.99 • 1.3MB

ReadyGetSet (Rel. April 14, 2011) provides branch managers, sales professionals, accountants, consultants, and others audio reports containing insight, trends, and more about 100 business types.

Regus

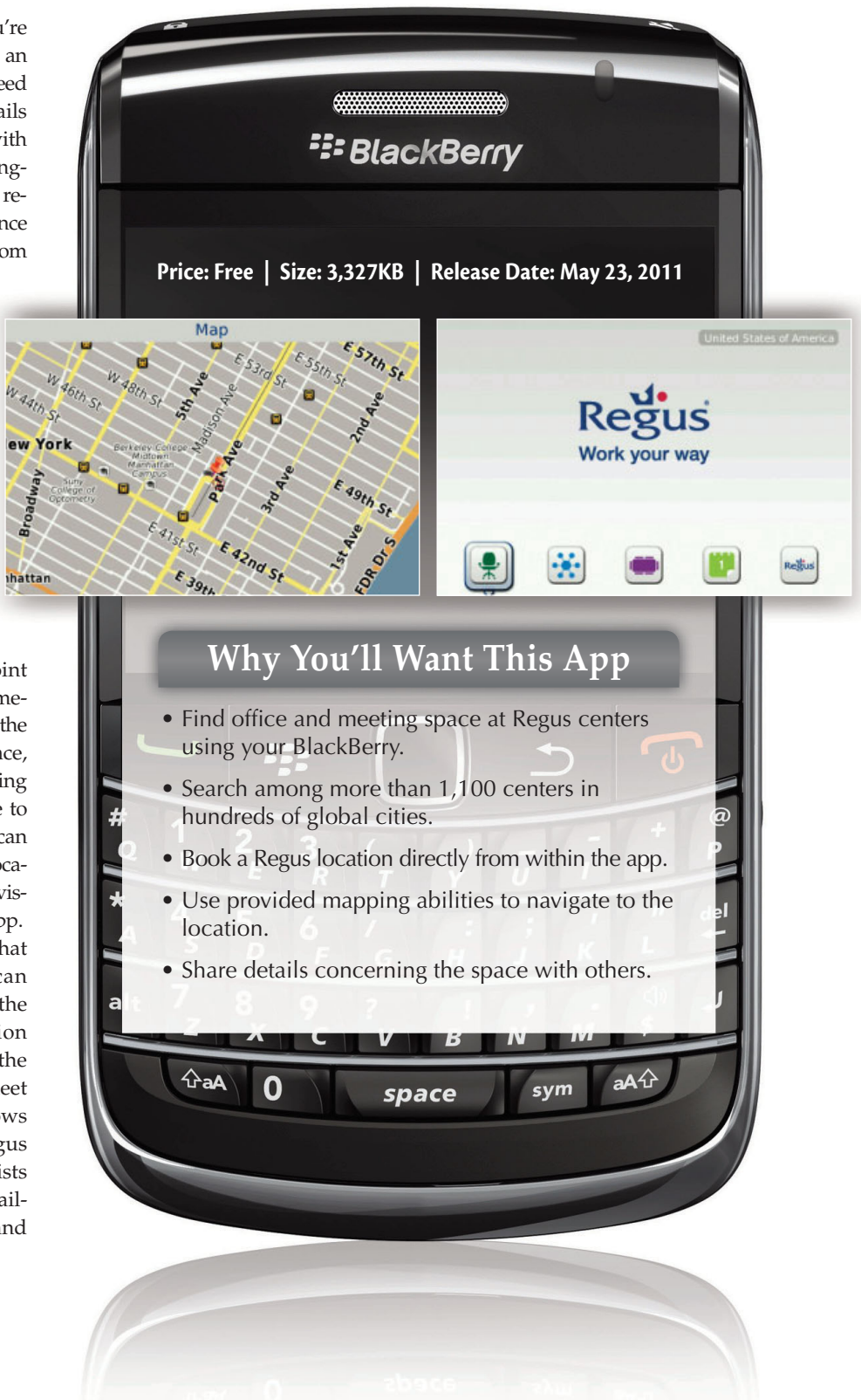
Book Office & Meeting Space From Your BlackBerry

There are those times when you're on the road and need to make an impression on a new client or need to discuss pertinent or sensitive details concerning a make-and-break deal with someone you're hoping to forge a long-term partnership with. Such meetings require a setting that offers more ambience and privacy than a hotel conference room or a coffee shop can provide.

For such instances and similar ones, Regus (www.regus.com) provides professionally equipped work settings in the form of office space, business lounges, and meeting rooms that the company operates in more than 1,100 centers located in roughly 500 cities in 85 countries. This app provides access to finding and booking a particular Regus space in these centers directly from a BlackBerry device no matter where you're currently located.

In addition to helping you pinpoint available Regus locations in your immediate and extended proximity through the use of a streamlined, intuitive interface, the app conveniently provides mapping features to help you view or navigate to the centers' locations. Further, users can get a solid idea of what a particular location's space actually looks like before visiting it via the photos provided in the app.

Once you find a Regus location that you're interested in using, you can book the space directly from within the app. You also can share information concerning the meeting space with the clients or others that you plan to meet at the location. Further, the app allows for saving details concerning the Regus center to your BlackBerry contacts lists so that the information is readily available the next time you're in town and want to book the same location.





Since 1979, Sandhills Publishing has produced publications covering technology beginning with the introduction of *Processor*. Over the years, the company has developed a complete line of computing publications, encompassing *Smart Computing*, *PC Today*, *Computer Power User*, and *First Glimpse*. Our plain-English approach has served audiences well for 30 years, ensuring they receive accurate and unbiased technology information to meet their needs.











Sandhills Publishing®
www.sandhills.com

BLACKBERRY APPS



Rekoop 1.0.4
Free • 1,299KB

This app (Rel. May 19, 2011) for the BlackBerry PlayBook gives business users real-time, cloud-based, and secure insight into key performance indicators via the use of individual, customizable capture-based modules. Usage requires proper enterprise login credentials.



Presenter's Edge 1.0.3
$3.99 • 444KB

This presentation-focused app (Rel. June 22, 2011) from Stormfront Software lets PlayBook owners use the tablet as a remote control for PowerPoint representations. It can also display presentations cue cards and standalone cue cards when PowerPoint is needed.



Solicit 1.0.0
$2.99 • 3,421KB

Solicit (Rel. June 7, 2011) from developer Graham Huber promises to help PlayBook owners collect contact information in style without an Internet connection or BlackBerry Bridge needed. The app includes optional Company, Address, and Notes fields, and a new interface.



Fixmo Extend 2.1.0
$14.99 • 232KB

Fixmo Extend (Rel. April 19, 2011) enables users to connect a laptop to a BlackBerry and gain Internet access from anywhere via the BlackBerry's existing data connection. The paid version offers unlimited data monthly.



AteneoWeb Mobile 7.4.0
Free • 10KB

Real-time tax information concerning legal, corporate, and labor issues is within reach with AteneoWeb Mobile (Rel. Sept. 7, 2011). AteneoWeb is a network of accountants, lawyers, and other professionals. Search abilities are also supported.

Shuttle® Computer

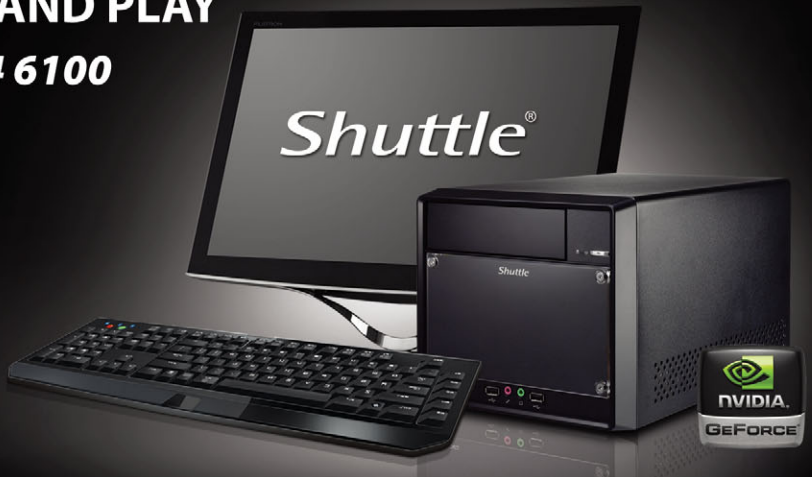
BRINGING HIGH-DEFINITION TO THE PC



UNLOCK A WORLD OF WORK AND PLAY

INTRODUCING THE NEW SHUTTLE ***R4 6100***

Break through the boundaries of your screen with power and performance for a new generation of work and play. Whether it's multitasking or multimedia, a new Shuttle® PC with NVIDIA® GeForce™ GPUs speed up applications and supercharge performance for HD videos, like the ***Sherlock Holmes: A Game of Shadows*** trailer.



INTEL® H61 | 2ND GEN INTEL® CORE™ i3[A] | NVIDIA™ GTX 560[B] | 4GB DDR3[C] | 3 YEAR WARRANTY | LIFETIME SUPPORT

CONFIGURE YOURS TODAY: **US.SHUTTLE.COM** BUY NOW: **1-888-XPC-1818**

A. Supports 2nd Gen. Core i7/i5/i3 95W CPUs. **B.** Supports GTX 560 or higher with PSU upgrade. **C.** Supports up to 8GB DDR3. © 2011 Shuttle Computer Group, Inc. All rights reserved. © 2011 NVIDIA Corporation. All rights reserved. All other trademarks are the property of their respective owners.

OFFICIAL RULES: NO PURCHASE NECESSARY. Open to U.S. legal residents 18+. Void where prohibited. Starts 11/1/11. Ends 12/15/11. Full Rules – Facebook.com/ShuttleComputer

Fry's Electronics · Micro Center computers & electronics · CompUSA · amazon.com · newegg.com · TigerDirect.com · Circuit City · NCIX.com



Smartphone Tips

REVI

Your Mobile Mojo



ANDROID

➤ **Clear Data, Cache & More**

Android-based devices give you a few app-specific controls that are only accessible from the Settings menu, not from within the app itself. To access these mostly memory-centric functions, press the Home key; press the Menu key; tap Settings, Applications, and Manage Applications. From here, tap the All tab to display a list of all the apps installed on your device. The Application Info screen appears when you tap one of the apps from the list; it displays the app name and version, storage data, as well as additional details about the permissions the app has to access various aspects of your phone. Not all apps will let you perform the functions listed below, but the ones that do can occasionally benefit from the stated operation.

- **Force Stop:** This button closes an application and any background services associated with it.
- **Uninstall:** This one is as straightforward as it gets. Press it to uninstall the app and any associated data and settings.
- **Clear Data:** Tap this button to delete an application's settings and other data.
- **Move To SD Card:** Tap this button to remove the app from internal phone memory to an external SD card.
- **Move To Phone:** If the application is already installed on an external SD card, then the button you'll see here lets your remove it and install it directly to the internal phone memory.
- **Clear Cache:** This button lets you delete any data that the app creates in a temporary portion of the phone's internal memory.
- **Clear Defaults:** In the Launch By Default section, click this button to clear the settings of any app that you have configured to use certain file types.
- **Share:** This button lets you send an email or text message with a link to the particular app's Android Market page.

➤ Report Spam

Just because you're using your smartphone for a majority of your emailing these days doesn't mean you have to put up with spam. To take care of unwanted messages, just tap the offending piece of email to view it, press the Menu button, and then tap Report Spam. Depending on your phone, you may need to tap the More icon to see the Report Spam option.

BLACKBERRY

➤ Password Keeper

It seems like every Web site you use requires a username and password, and it's not safe to use the same password for all of them. Also, some sites even require you to regularly change your passwords. To help you keep track of them all, BlackBerry offers the Password Keeper utility, an application that lets you record and manage all of your usernames and passwords in one place.

To launch Password Keeper, select the Applications folder from the main menu and then select the Password Keeper icon. The first time you launch the utility, you will be prompted to choose and confirm a new master password. Enter your password and select OK. To add a new entry, press the Menu key, click New, type the relevant information (username, password, Web site), click the trackpad/trackball, and then click Save.

Password Keeper can also generate random passwords of any given length with letters, numbers, and symbols. To do this, click the Menu button from within Password Keeper, select New, press the Menu button again, and select Random Password. Use the Options menu option to adjust the parameters of the random password. Now that remembering passwords is no longer a problem (just don't forget your Password Keeper password), you can fortify all those weak passwords you've been using and reusing.

➤ Close Those Apps

If you're like us, you've probably come to rely on the Escape key for moving out of applications, menus, and more. That's all fine and good as long as your BlackBerry has enough resources to handle a handful of applications running simultaneously in the background. If it doesn't, then you could experience an occasional performance hiccup. Your best defense against the slowdown is to get into the habit of manually closing applications instead of just backing out of them. To do this, every time you finish using a particular app, press the Menu key and select Close. This ensures the app doesn't continue to consume resources when you're no longer using it.

IPHONE

➤ Restore Your iPhone

There are a couple of different reasons you'd want to restore your iPhone, whether to resolve a stability problem or simply prepare it prior to selling or donating it. Note that performing a restore will completely wipe the device of songs, videos, contacts, photos, calendar information, and any other data and files you've added; your restored iPhone will be factory fresh. Start by making sure your computer is running the latest version of iTunes. Apple's iTunes software automatically checks for version updates when you start it, but if you want to check manually, click Help from the top of the iTunes interface and then select Check For Updates. The software will display a pop-up informing you either that you currently have the latest version or that a new version is available. Click the Download iTunes button and follow the onscreen prompts to complete the operation.

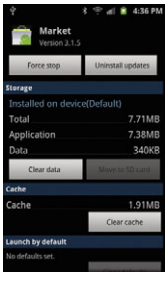
Next, connect your iPhone to your Mac or PC, and then select it in iTunes. If your iPhone is frozen and iTunes fails to recognize the device at this point, press and hold the Home and power buttons simultaneously for roughly 10 seconds, then release the power button while still holding the Home button; this puts your iPhone in DFU (Device Firmware Upgrade) mode and iTunes should detect your iPhone. Next, select the Summary tab (in DFU mode Summary tab may be the only available tab), click Restore, and then follow the onscreen prompts.

You may be prompted to back up your settings; it's a good idea to do this prior to initiating the restore. Once the restore is complete, iTunes will give you two options—Set Up As A New iPhone or Restore From The Backup Of—followed by a list of dated backups in a drop-down menu. Click the radio button adjacent to the option you want (and select the dated restore if you chose the Restore From The Backup option) and click Continue.

WEBOS

➤ Manage Memory

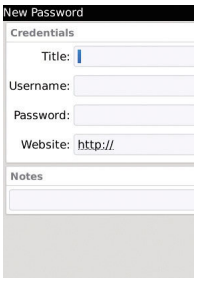
To give your webOS-based device a new lease on life, make sure to keep a



There's a lot of information in the Manage Applications menu; here's what you need to know.



Password Keeper for your BlackBerry keeps track of all your usernames and passwords.



You can even add notes about each Password Keeper entry.

decent amount of memory free. If you fill it to the brink, you may see performance slowdowns, application hangs, and other issues that will generally degrade your overall experience with the device.

Check your webOS-based device's available memory by tapping the Launcher and selecting the Device Info icon. In the Phone section, the total memory will be adjacent to the Memory heading and the amount of free memory will be listed adjacent to the Available heading. If you have less than 1GB of available memory, it's a good idea to delete a few apps, media files, or email backlogs to reclaim some space.

➤ Uninstall Apps

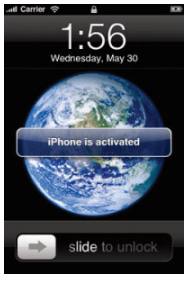
To uninstall apps on your webOS-based device, tap the Launcher, tap in the upper-left corner of the screen to display the pop-up menu, select List Apps, and then tap the application icon that corresponds to the app you want to toss. Tap Delete to complete the removal process. Note that after you press Delete, the app will be removed from the device without so much as a confirmation screen, so make sure you want to get rid of the app when you tap Delete.

➤ Transfer Photos, Music & Videos To Your PC

One of the best ways to boost the available memory on your webOS device is to unload some of the photos, videos, and music files. While webOS's automatic backup feature is nice, there are several items that have been omitted from the backup procedure: namely, music, pictures, and videos. To make sure you don't lose these items, you'll need to transfer them to your PC using USB Drive mode.

Keep in mind that when your device is in USB Drive mode, you can't take calls, browse the Web, or exchange email messages, but you can access your media files and save copies to a secure location on your PC. Start by connecting your phone to your PC with the appropriate USB cable. Then tap USB Drive. The phone should appear on your PC as a removable storage drive.

If the Found New Hardware wizard launches, click Cancel to close it. Navigate to the phone in My Computer (in Windows XP) or Computer (in Windows Vista/7; look under Devices With Removable Storage), double-click it, and then simply explore the folders for media you want to move from your phone to your PC. Right-click the file and select Cut. Then, in a location on your PC, right-click and select Paste. You'll find photos in the DCIM folder, videos in the Videos folder, and music in the Music folder. When you're finished clearing files from your phone, right-click the phone using Windows Explorer and click Eject.



Following a restore, you need to make sure your iPhone is activated.

WINDOWS PHONE 7

➤ Update Your Device

By the time you read this, Microsoft will have pulled the trigger on the latest update rollout for Windows Phone 7 devices: Mango, or Windows Phone 7.5. By default, your Windows Phone 7 device will display a pop-up message whenever there is a phone OS update, which you can tap and follow prompts to install. Before you begin, however, just make sure the device's battery is fully charged or plug it in before you start the update process.

Mac users will want to install Windows Phone 7 Connector for Mac. Windows users need to install the Zune software (www.zune.net). Chances are, a new version of the Zune software will precede the update, so install the update if prompted. The download will need a certain amount of space on your phone, so if you have less than 1GB free, you might want to clear some space by removing a few unused apps or spare media files. Your computer also needs plenty of free space, so make sure it has enough for the installation files.

Also make sure the phone's date and time are correct; swipe left from the Start screen, tap Settings, scroll to and tap Date & Time, and make the necessary adjustments. Finally, you'll need to connect your Windows Phone 7 device to your PC or Mac to complete the update, so find the USB cable and have it ready. The update process can take up to an hour.

If the update notification has been disabled, you can manually check for an update by flicking left from the Start screen, scrolling to and tapping Settings and Phone Update and then tapping the checkboxes in front of Notify Me When New Updates Are Found and Use My Cellular Data Connection To Check For Updates.

It's possible you have received the latest update for your device and didn't even know it. To check your OS version, swipe left from Start, tap Settings, scroll to and tap About, and then tap the More Info button. The OS version for phones with the Mango update is 7.5 or higher. Any phone with a version prior to that is probably missing out on the new features.

➤ Explore The People Hub

Windows Phone 7 devices with the Mango update now have access to the Groups tab within the People Hub, which lets you keep the most important people in your life close at hand. To create a Group, swipe left from Start and tap People, flick to All, tap New, tap New Group, type a name for the Group, tap Add A Contact, tap a contact name, and then tap Save. Repeat this process for each new person you add to the group. The new group will appear at the top of your contact list. Tap and hold a group to pin it to Start, edit it, or delete it entirely.

Remember, this feature is exclusive to Windows Phone 7 devices with the 7.5 update, so you'll need to install the update to start enjoying it.

DIGITAL Diversions

➤ EPSON TAKES YOUR APPLE VIDEO ON THE ROAD ①

If you're so inclined, you could dock your iPad, iPhone, or iPod touch in Epson's new MegaPlex MG-850HD ($799; www.epson.com) expressly to output audio over the MegaPlex's two built-in 10W speakers. That would be a shame, though, as the MG-850HD can also beam presentations, slideshows, and movies with 720p HD goodness up to 100 inches large on any screen or wall in a home, office, hotel room, or wherever you may be. In other words, the MegaPlex essentially serves as a portable home-theater setup (handle included) for video stored on or streamed from an Apple device. Better, the MG-850HD sports HDMI and component and composite inputs, so your Android smartphone or tablet or gaming console will also work. A USB port and plug-and-play support, meanwhile, let you connect a PC or Mac. Elsewhere, Epson's new MG-50 ($699) also features 3LCD technology but offers 540p resolution and 2,200 lumens vs. the MG-850's 2,800 lumens.



➤ NUFORCE GIVES DIGITAL AUDIO FILES A FACELIFT ②

It's Nuforce's (www.nuforce.com) belief that "high performance consumer electronics shouldn't have to sacrifice quality and integrity for affordability." To that end, the company's Icon iDo ($249) takes the music files stored on your Apple iPad, iPhone, or iPod and bumps them to "audiophile-grade CD quality sound" (up to 48kHz sampling rate and 24-bit resolution). How? By



bypassing the default DAC (digital-to-analog converter) in the Apple device to extract the device-stored audio data and convert it to "high-quality files for bit-perfect and low-jitter music playback." Setup boils down to connecting an Apple device to the Icon iDo via standard 30-pin cable, plugging in the Icon iDo's included DC power supply, and connecting the Icon iDo to a home stereo system via RCA or coaxial cables. The Icon iDo also sports a headphone jack for solo listening, providing a built-in headphone amp to deliver "optimal amperage" for "greater audio clarity."



➤ "MADE FOR MANY" ③

That's one of the themes of Jays' (www.jays.se) new a-Jays One+ earbuds ($49.99), a follow-up to the company's previous a-Jays One model. Beyond featuring a cool and practical flat, tangle-free cord, the One+ integrates an in-line microphone and control button (Play, Pause, Answer, and Hang Up) that the company states works with most Apple, BlackBerry, HTC, LG, Motorola, and Samsung devices. Further, the buds are compatible with Android, iOS, Skype, and Windows Mobile platforms, and when paired with Jays' free Headset Control Android App (available for Android 2.2 or later devices) you gain additional volume, track, and voice functionality. Inside each earpiece, meanwhile, you will find an 8.6mm dynamic speaker at work. Shipping is expected for later this year with five pairs of silicon sleeves included.

➤ AUDEZ'E LCD-2 IMPROVES ON GREATNESS ④

Even before U.S. headphone maker Audez'e (www.audeze.com) recently revised the driver in its gorgeous LCD-2 headphones, many reviewers considered the cans, which feature planar magnetic transducers, as providing the best sound quality of any full-sized headphones around. Audez'e promises that the revision 2 transducer now in use provides the same mechanical construction as before but "uses newly developed thinner and more reliable diaphragm material." While the LCD-2's sound signature remains similar, Audez'e states, this latest version represents a "substantial improvement in sound quality, sound resolution, and especially imaging, which is wider, more stable, and three dimensional." Aesthetically, the LCD-2 now includes a leather headband option but maintains the use of extremely attractive Caribbean Rosewood for the earcups. So how much does top-quality sound and stunning looks cost? A cool $995.

➤ AMAZON SETS THE TABLET WORLD ON FIRE ⑤

By taking its new Wi-Fi-only, 7-inch touchscreen (1,024 x 600) Kindle Fire tablet below the $200 line, Amazon.com reportedly will take a $50 or so hit hardware-wise with each unit. Considering the wealth of media Amazon has readily on hand—millions of songs; movies for streaming; apps via the Android Appstore (not Android Market); digital magazines; and of course, e-books—for immediate purchase and download, however, many pundits believe Amazon .com will come out just fine.

To arrive at the tantalizing $199 price, Amazon.com omitted a camera, microphone, integrated email client, and other features and gifted the Fire with only 8GB of storage. Still, users can store their Amazon.com content on free Amazon cloud space, and the Fire features Amazon.com's new and intriguing Silk Web browser using a "split browser" approach that involves the tablet and Amazon.com's cloud computing service working together for what's being touted as very fast Web performance.

Introduced in late September by CEO Jeff Bezos, the Fire will start shipping Nov. 15, in time for the holidays. Elsewhere, Amazon.com also has new 6-inch Kindle ($79), Kindle Touch ($99), and Kindle Touch 3G ($149) models available. None include an integrated keyboard, but the latter two sport multitouch displays, 4GB of storage, and two months' worth of battery life. The former offers 2GB of storage, one month of battery life, and a five-way controller.

Best Apps For Kids

Considering there are thousands of apps in circulation with more introduced daily, it's not surprising there's a healthy supply of great apps worth your kids' time. The following for iOS and Android devices rate as some of the best.

ABCS

➤ Monkey Preschool Lunchbox ①

Aimed at the preschool set, this extremely popular app (99 cents, iOS; $1.99, Android) from Thup Games serves a friendly gateway to fun-filled learning via multiple games packed with interactive activities and rewards along the way. Topics include colors, matching, counting, letters, puzzles, spotting differences, and shapes, and all are led by an enthusiastically charming monkey.

➤ Peekaboo Barn

Among the first apps released especially for toddlers, Night & Day Studios' Peakaboo Barn ($1.99, iOS; $2.99, Android) still ranks amongst the best thanks to friendly illustrations (from the mind and hand of regular New Yorker contributor Divya Srinivasan.) In addition to helping kids identify and learn about animals, the app assists in developing children's recognition of specific sounds.

➤ Animal Preschool Word Puzzles HD

Two things that seemingly all young children love are animals and puzzles. This colorfully illustrated app ($1.99) from 22learn combines both of these into an inviting puzzle- and reward-based learning experience that helps kids learn animal names, develop their matching and problem-solving skills, recognize sounds of various letters, and more.

BOOKS

➤ Nighty Night! HD

Featuring lullaby music, 2D illustrations, beautifully executed animation, and friendly animals (dog, pig, sheep, and so on), Shape Minds & Moving Images' Nighty Night! HD ($1.99) from Oscar nominee Heidi Wittlinger gives young ones the opportunity to turn out the lights while putting animals to bed. The iPad app provides parents with a sweet nightly ritual they can share with their children.

➤ The Monster At the End Of This Book ②

Chances are good you children already watch "Sesame Street" and are quite fond of the show's monsters, something that makes this award-winning, popular app based on the book of the same name a natural fit. Filled with interactive animation and narration from furry friend Grover, the app ($3.99) from Sesame Workshop Apps is a must-have for Apple device-owning parents.

➤ The Going To Bed Book

This is the first app ($2.99, iOS; $2.03 Android) based on a book from renowned children's author Sandra Boynton. Even if your family already has the print edition on hand, this digital extension from Loud Crow Interactive is worthwhile, because it's filled with numerous interactive features that will likely have your kids wanting more, including an effect that appears to steam over a device's screen.

DRAWING, PHOTOS & VIDEOS

➤ Drawing Pad

Described as being "cheaper than a box of crayons" and a "full-featured mobile art studio," this tablet-geared app ($1.99, iOS; $1.99, Android) from Murtha Design is a wonderful, creative time-filler for kids and adults alike. Complete with realistic looking crayons, paint brushes, stickers, pens, and more, the app includes saving and sharing abilities, including via email and social networking sites.

➤ WeetWoo! Kids Videos ③

NetJunky Research's WeetWoo! Kids Video ($3.99) goes to the trouble of finding "kid-friendly, parent-selected" videos suitable for children ages four and up so you don't have to. All videos come from YouTube, and children have thousands of categorized viewing options with new videos constantly being added. Further, the app supports playlists and is AirPlay compatible.





HIGH SCHOOL & COLLEGE BOUND

➤ Drivers Ed

There comes that time when a parents' little boy or girl grows up and wants the keys to the car. This free app from DriversEd.com, which has been downloaded hundreds of thousands of times, aims to make the transition from tot to driver a safe one by providing hundreds of driving-related questions via customizable quizzes, flash cards, and individual state's driver's manuals.

➤ The Official SAT Question Of The Day ④

Compatible with iPhone, iPod touch, and iPad, this app (free from The College Board) is an excellent way to help a college-bound student prepare for the SAT. Featuring actual SAT questions as presented from the organization that devises the test, the app supplies explanations for questions and indicates how others responded, as well.

GAMES

➤ Fruit Ninja

Halfbrick Studios' Fruit Ninja (99 cents, iOS; $1.27, Android) is billed as the "messiest and most satisfying fruit game ever." It's also one of the most popular due to its simplistic but addicting gameplay, which is suitable for anyone who can swipe a finger across a display's screen. As the name suggests, Fruit Ninja features "squishy, splatty, and satisfying fruit carnage" via Classic, Zen, Arcade, and multiplayer modes.

➤ WordzUp!

Finding hidden words in selectable 3x3, 4x4, 5x5, and 6x6 grids within a given time frame is the thrust of this free app from Anthrological, which kids can play alone or with a friend. A cinch to immediately begin playing, the app motivates kids by detailing how many word possibilities and overall points a given level contains.

➤ Mushroom Age HD ⑤

For playing on iPads, this adventure-based game ($6.99) from G5 Entertainment, involves helping the game's primary character, Vera, find hidden objects in various historical settings in which she encounters various historical figures from the future and past. Overall, there are 23 chapters and 45 levels to discover, along with 41 mini-games to keep your child busy for a long time to come.

REFERENCE

➤ Stack The States

A staple of any American student's education is learning about the 50 U.S. states. This award-winning app (99 cents) by Dan Russell-Pinson, makes that process exceedingly fun by packing four games into one to learn about capitals, geographic locations, abbreviations, nicknames, and more. Tackle this title and you can move on to the developer's "Stack The Countries" ($1.99) game.

➤ Ultimate Dinopedia: The Most Complete Dinosaur Reference Ever

This interactive app ($4.99) for the iPad is based on the National Geographic Society's book of the same name and packs details concerning more than 700 dinosaurs complete with excellent artwork for each. Additionally, plenty of videos, activities, stats, audio pronunciations, and a user-friendly family tree help bring these extinct animals back to life.

➤ Google Sky Map

This novel app from Google is free and promises to turn your Android-powered device "into a window on the night sky" by helping identify and locate constellations, planets, and more. Usage boils down to pointing your device at the sky and moving your device as directed. A manual mode for browsing the sky is also available.

SCIENCE

➤ Touch Physics ⑥

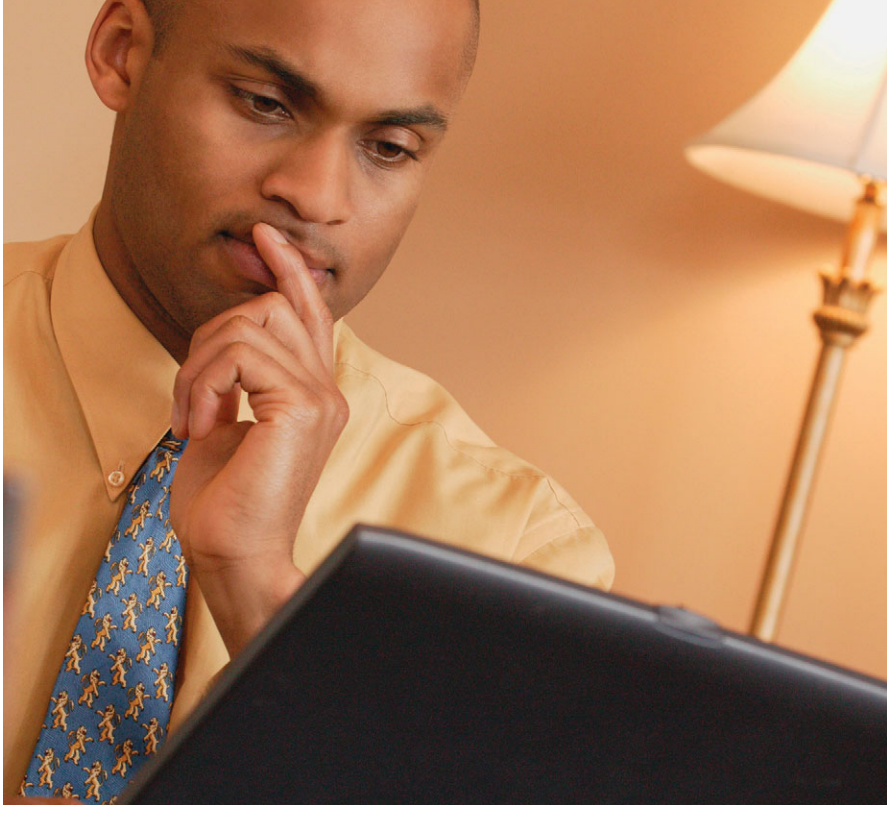
Draw a shape using a virtual crayon on your Apple device's display and watch the shape come to life. That's what this intriguingly addictive app ($1.99) from Gamez 4 Touch provides where altering gravity, friction, elasticity, and physics modeling in general is concerned. A Lite version provides 10 levels, but this paid version gives you 50 levels that increase in difficulty as you progress.

➤ Video Science

For some people seeing how something works is the easiest and best way to learn about it. If that describes your student, Science House's Video Science (free) provides two- to three-minute videos that demonstrate various science experiments (chemistry, convection, fire, and so on) as presented by science teacher Dan Menelly, an NSF Einstein Fellowship In Cyberinfrastructure winner.

Resolving remote network issues often goes beyond common fixes

you may have used to fix your Internet connection. Fortunately, you can quickly eliminate a number of possibilities using a CLI (command-line interface; a text-based command window that is a holdover from the early days of computing), which is still available in Windows XP/Vista/7.



Solve Remote Network Connection Problems

ALL THESE SUGGESTIONS assume that the network is up and operating. It also assumes you are connected to the Internet. Before you proceed, you'll need to know how to open the CLI window. In WinXP, click Start, select Run, type CMD in the Open field, and press ENTER. In Vista/Win7, click the Start button and type **CMD** into the Start Search field, and then click the CMD icon that appears in the results.

PING IT

All Internet or network hosts, computers, routers, and numerous other Internet-enabled devices use an IP address (which is a string of four groups of numbers separated by periods, such as 233.122.0.2) to uniquely identify themselves. You may have used this number to access a network login. This can also be a Web address (called a host name) or DNS name to access a login. IP addresses and DNS names are interchangeable. With either, a ping command can determine whether the computer and network can exchange basic data.

From the command line window, type **ping** followed by a space and the IP address or DNS name (examples would be ping 167.154.16.27 or ping www.corporatenetwork.com). Press ENTER. If you see a time-out message, wait a few seconds. A time-out alert appears if the reply takes longer than a second.

If the response indicates that the data packets were sent and received, then your computer is exchanging data with the network address. You can skip to "Get Connected" to set up a dedicated connection and edit settings. If you've been accessing the site via a Web address, go to the "Look It Up" section before heading to "Get Connected."

Key Points

- If you can send data packets but none are returned, it generally means the network is refusing to acknowledge your request.
- Obtaining the DNS name and IP address and comparing access times between the two can determine whether Windows is experiencing DNS resolution issues.
- The point at which a route trace hangs can help you determine where your request for network attention is being disrupted.

If you receive a response that contains something about a nonexistent domain, you are likely using the wrong IP address or DNS name to log in. Double-check the address and try to connect normally. (If you are logging in with an IP address, skip to "Look It Up" for a quick way to check its validity.)

If you do receive a transmission error, then the ping data is not leaving your PC. Your firewall is likely blocking you from accessing the network. You will want to add the site to your firewall as an allowed exception (refer to your firewall's help documentation for these instructions) and try again.

If you receive a response after an excessive number of time-outs, the network's response to your connection may be slow and your browser or other network access utility may be giving up before it connects. Lengthen the response time by adding a -t switch (ping -t followed by the IP address or DNS name). This will ping the address indefinitely. After a dozen pings, press CTRL-Break to view the packet data. If there is no response yet, continue awhile longer, and then press CTRL-C. If you never get a response or the number of pings to get a response is considerable, skip to the "Trace the Route" section for assistance.

If you get a message saying the ping request couldn't find the host or the response indicates the number of data packets sent is zero, the network is not acknowledging your ping. Changes to the network or configuration may be preventing access. You'll want to contact the network administrator for further assistance.

LOOK IT UP

You can look up a DNS name from an IP address and vice versa. From the command line window, type **nslookup** followed by a space and either the DNS name or the IP address and press ENTER.

Write down the DNS name and numeric sequence you see in the lines that begin with Name: and Address: (ignore aliases). If you are checking an IP address, the DNS name should help confirm it. If you recognize nothing, contact the network administrator to confirm the IP address.

If you are using a DNS name, Windows may be having a problem with DNS name resolution (translating the DNS name into an IP address). Perform two pings from the same command line window, first using the DNS name you wrote down and then using the IP address. Compare the access times and packets you sent and received. If there is a big difference in behaviors pinging the DNS name vs. the IP address, skip to "Get Connected."

> Tracing the path data packets take going to the network will help pinpoint problems.

TRACE THE ROUTE

Tracing the path data packets take going to the network will help pinpoint problems. From the command line window, type **tracert** followed by a space and the DNS name or IP address, and press ENTER. Lines will appear with access times and IP addresses.The final few hops should show domain names—the last one being your network. This is the route—and the time the trip is taking—between nodes on the Internet.

If an early hop takes a long time or causes the trace to hang (a flood of time-outs), contact your ISP. If you reach many hops before things go awry, the problem may be with a gateway or router at or near the location of the remote network. Check with the network administrator for assistance.

GET CONNECTED

Setting up a direct VPN connection gives you a dedicated login interface and lets you avert DNS issues.

To set up the connection in WinXP, select Control Panel on the Start menu. Click Network And Internet Connections and then select Create A Connection To The Network At Your Workplace. In Vista/Win7, click Control Panel on the Start menu and click Network And Internet (in Category view), then Network And Sharing Center. Click Set Up A Connection Or Network (Vista)or Set Up A New Connection Or Network under Change Your Network Settings (Win7). Select Connect To A Workplace, then Use My Internet Connection. (Vista/Win7 offers smart card as a connection option, but we won't discuss that here.)

Select Virtual Private Network Connection, name the connection, and provide the host (DNS) name or IP address. If you are asked if you would like to dial a connection, click No (unless you only have dial-up Internet) and click Finish (WinXP) or Connect (Vista/Win7). The OS will attempt to connect you without configuring any settings. If this solution does not work, or if you are using WinXP, proceed with the following instructions.

Return to the Network Connections window in WinXP or the Network and Sharing Center in Vista/Win7 and click the option to manage network connections. Right-click your VPN network icon and select Properties. Next, click the Networking tab, click Internet Protocol (in Vista/Win7, you will need to do this for TCP/IP V4 and TCP/IP V6), and then click Properties. Override automatic configuration and provide the exact IP address and DNS names for the network. Exit the Properties interface, right-click the VPN icon, and click Connect. Provide your login information if prompted.

If you can't connect, then Windows can provide assistance, but you may need more advanced configuration information. You will need to contact the network administrator for detailed information.

There should be a corollary to Murphy's Law expressly for business travelers

Perhaps something like this: If something's going to go wrong with your notebook, it won't go wrong at the office, when the IT department is just down the hall. No, it'll crash at the worst possible time—at 2 a.m., just hours before a huge, out-of-state business presentation.



How To Deal With A Malware Infected Notebook

No matter what OS you are using, at any time, malware can still bring your notebook to its knees. The important thing, however, is not to stress out over spyware and malware while you're on the road. Here are a few tips to make sure your notebook stays up and running while you're away from home.

THE RIGHT TOOLS

Most of us have some antispyware and antivirus software installed on our business notebooks, but these programs aren't really going to be a whole lot of help unless they are updated frequently. Even the outstanding Spybot Search & Destroy (free; www.safer-networking.org) needs your help to do its job properly.

When a user notices a problem, a common first reaction is to run the antispyware and antivirus programs on your machine. That's a great idea, of course, but be sure to update the software before you run them. This can save you a bit of time and will help root out the newest infections you may have picked up while surfing the Web.

You can set the enterprise-level antivirus programs from McAfee and Symantec to update automatically, but with some programs, it's a good idea to manually update before you start the lengthy scanning process.

For example, when using Spybot Search & Destroy, all you have to do is click the Update icon on the left side of the screen to download the newest malware definitions. After you downloaded the latest definitions and detection rules, click the Search For Problems icon and follow any prompts to complete the update.

Also, it's a good idea to run more than one antispyware program. Ad-Aware from Lavasoft (free; www.lavasoftusa.com) is a good option. Again, this excellent program can only run as well as you let it, so click the Check For Updates Now link at the bottom of the screen before scanning your machine.

THE BEST DEFENSE

One of the best ways to keep your computer from getting loaded down with malware is to never let the stuff in the door. Windows includes a basic firewall (it's activated by default), but added protection helps.

First, let's check to make sure your Windows Firewall is up and running. To access the firewall in Windows Vista/7, click the Windows icon, select Control Panel, and select Windows Firewall; in WinXP, click Start, Control

Panel, and then Windows Firewall. If the firewall is set to Off, simply select the radio button or link for On and click OK.

Now comes the step of adding another layer of protection. There are several free firewalls available on the Web that do a marvelous job of protecting your computer from unwanted intrusions. One of the most reliable is ZoneAlarm (free; www.zonelabs.com). Once installed, ZoneAlarm will prompt you to determine which programs are authorized to access the Internet. After that, ZoneAlarm will block the rest (or at least seek permission to allow a new program to access the Internet).

Of course, the enterprise-level offerings, such as Symantec's Sygate Enterprise Protection and McAfee Total Protection For Enterprise, include powerful firewalls, so if your company uses programs similar to those, make sure they're up and running before you leave for a business trip. You can also try out the antivirus and personal firewall solutions from F-Secure (www.f-secure.com).

DON'T CLICK THAT

Automated spyware and antivirus tools are great, but they're no substitute for a little bit of vigilance on your part. Got an email from someone you don't know? Immediately trash it without opening it. Even if your email program automatically opens your new messages in a reading pane, it's a good idea never to download an unexpected attachment. Consider using Yahoo! Mail (mail.yahoo.com) for your personal email, as it adds an extra layer of protection by immediately scanning all incoming and outgoing attachments for virus threats.

Also, no matter what the pop-ups tell you, don't click anything that jumps unsolicited onto your screen claiming to be able to fix a virus or spyware problem. These pop-ups are more often than not carriers of spyware and viruses in the guise of an actual message from your OS. A general rule of thumb is that if it opens in a browser window and you didn't specifically point your browser toward it, don't click it. Just close the window and go about your business.

> Got an email from someone you don't know? Immediately trash it without opening it.

KNOW WHAT YOU'RE RUNNING

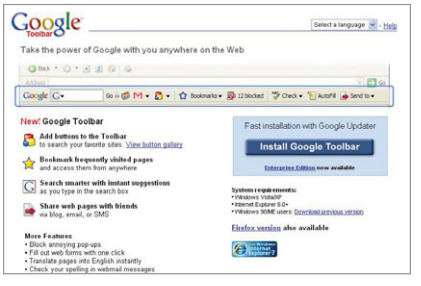
So, your system is armed to the teeth with regularly updated antivirus and antispyware utilities, but you're still having troubles? There are some simple fixes you can run in Windows to help you at least get around spyware problems.

First, you can simply monitor and control the programs your computer is running at startup. To do this in WinXP, click Start, then Run, and then type **msconfig** into the window that appears. Click OK and then click the Startup tab. See anything with a blank entry? If it refuses to identify itself, it's a pretty good bet you don't need it to start up your machine. Deselect suspicious checkboxes (you can also streamline your computer's startup routine here, if you wish, by deselecting programs that automatically load that you rarely use). Click OK and restart when prompted. In Vista, open the Windows Defender program. Choose Tools and Software Explorer and then click Startup Programs from the Category menu. Your start-up programs will display in the left pane. Simply click a program to highlight it and then click the Disable button. Alternatively, you can permanently terminate a program by clicking the Remove button.

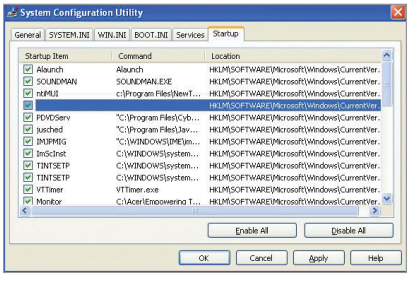
It's also a good idea to set a restore point when you know your computer is working well. That way, you can always restore your machine to a time when it was functioning properly. To do this, click Start, All Programs, Accessories, System Tools, and System Restore. Click Create A Restore Point and then follow the wizard that appears. To restore your machine, click Restore My Computer To An Earlier Time instead.



Before scanning your machine with a security utility such as Spybot Search & Destroy, be sure to check for updates.



Clicking pop-up ads can expose your machine to malware and scams. Utilities such as Google Toolbar (free; toolbar.google.com) can help protect your computer from such nuisances.



If a program has a blank entry, it's probably safe to deselect it. Be careful in this menu, though. You can cause more harm than good if you don't know what you're disabling.



You appreciate the fact that Excel is a power-packed program,

but you are also a professional on the go, and, frankly, you don't have a lot of time to learn the finer points of the software. No sweat. Read on and we will give you some great ideas of how to kick up your Excel skills a notch without spending a lot of time doing so.

Excel In A Crunch

EXPLORE VARIOUS SCENARIOS

One of the most powerful things you can do with Excel is play around with worksheet values to answer "what-if" questions. What if sales decrease by 6% next year? What if the cost of goods sold increases by 3%?

To calculate multiple outcomes such as these, you can use Excel's Scenario Manager. This tool enables you to specify which data cells you want to change and then quickly view the result in the worksheet.

To use the Scenario Manager, select the cells you want to include in the scenario and then choose Tools and Scenarios. In the Scenario Manager dialog box, click Add to display the Add Scenario dialog box. Type a name (such as Status Quo, Worst Case, or Best Case) in the Scenario Name text box and then specify which cells you want to change. Click OK and then enter a new value for each changing (variable) cell in the Scenario Values dialog box. Click OK, and the Scenario Manager dialog box will redisplay with the new scenario shown on the list. Complete the same steps for each scenario you want to create. Finally, to switch between the scenarios, click each one's name in the Scenario Manager dialog box and view the change directly on your worksheet.

SELECT CELLS BY DATA TYPE

You can quickly locate all the cells in a worksheet that include a particular type of data, such as those that include comments or formulas. For example, if you want to identify cells in a selected range that contain formulas, press CTRL-[(opening bracket); to find and select all cells with comments, press CTRL-SHIFT-O.

You can also highlight all the cells in a range that include objects, such as clip art, charts, or pictures. This helps you quickly identify all the items so that you can then apply actions to them, such as resizing, moving, formatting, or grouping them. To select all of a worksheet's objects, click one of them and then press CTRL-SHIFT-Spacebar.



You can use Excel's Scenario Manager to help you make sound business decisions.

FIND ANY TYPE OF DATA

You've probably noticed that it doesn't take long for a business worksheet to quickly mushroom in size, making

➤ ESSENTIAL FUNCTIONS

We compiled a list of some of the most-used Excel functions and a brief explanation of their purposes. If you need more guidance using these functions, consult Excel's Help feature.

SUM Totals the values in a range.

AVERAGE Averages the numbers in a range.

MAX Returns the maximum value in a selected range or set of numbers.

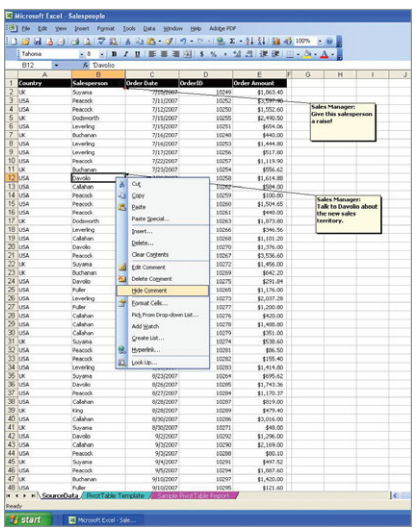
MIN Returns the minimum value in a selected range or set of numbers.

DATE Returns the serial number associated with a specific date. This function is often used to calculate the number of days between two dates.

COUNT Returns the number of cells that contain data in a range.

IF Returns one value if a specified condition is "true," a different value if the condition is "false." Helps you create various "what-if" scenarios and logically evaluate data.

ROUND Rounds values to a specific number of places.



You can use comments to jot down electronic notes on your worksheet.

it almost impossible to find data by simply scrolling. This is especially true when you're working on a laptop with a relatively small screen. It's also an inefficient way to find, let's say, one customer's name among several hundred. But help is at hand in the form of Excel's Find command.

To use this command, first select the range in which you want to look for the data (or select a single cell if you want Excel to search through the entire worksheet). Choose Edit and then Find or simply press CTRL-F to open the Find And Replace dialog box. Enter the text that you want to locate, and then click Find Next to highlight the next cell with your data; click Find All to display a list of cell references that contain the search text.

By default, Find searches through cells with values, such as text or numbers. But you can also locate information buried in worksheet comments, even if it is not displayed. To do this, click the Look In drop-down arrow in the Find And Replace dialog box and then choose Comments from the list.

ADD COMMENTS

You can easily add comments to an Excel worksheet, either for your own future reference or to share your ideas with others. To add these notations, right-click in the cell where you want to place the comment and then choose Insert Comment. Type your notes in the comment box and then click outside of it.

If necessary, you can edit the contents of a Comment by right-clicking the cell, selecting Edit Comment, and then modifying the text as you would in a word processor. You can also hide, show, or delete a comment by right-clicking the cell that contains the Comment and then choosing the appropriate command on the displayed list.

REPLACE DATA & FORMULAS

In addition to helping you locate data, Excel can help you rapidly replace formulas, numbers, or text with other data. For example, you can update a name that appears multiple times in a worksheet. To do this, choose Edit and then Replace or press CTRL-H. In the Find And Replace dialog box, enter data in the Find What and Replace With fields. Click Find Next, decide if you want to replace the selected occurrence, and then choose Replace. (If you're feeling especially brave, you can instead choose Replace All without looking at each occurrence.)

CALCULATE VALUES ON THE FLY

You can quickly calculate and display information about a selected group of values on Excel's status bar, which is located at the bottom of each worksheet. To do this, select the cells you want to add and then view the total on the status bar. But don't stop there. You can also display a wealth of other information about a selection by right-clicking the status bar and then choosing functions such as AVERAGE, MIN (minimum), or MAX (maximum) on the pop-up menu.

TAKE A SHORTCUT

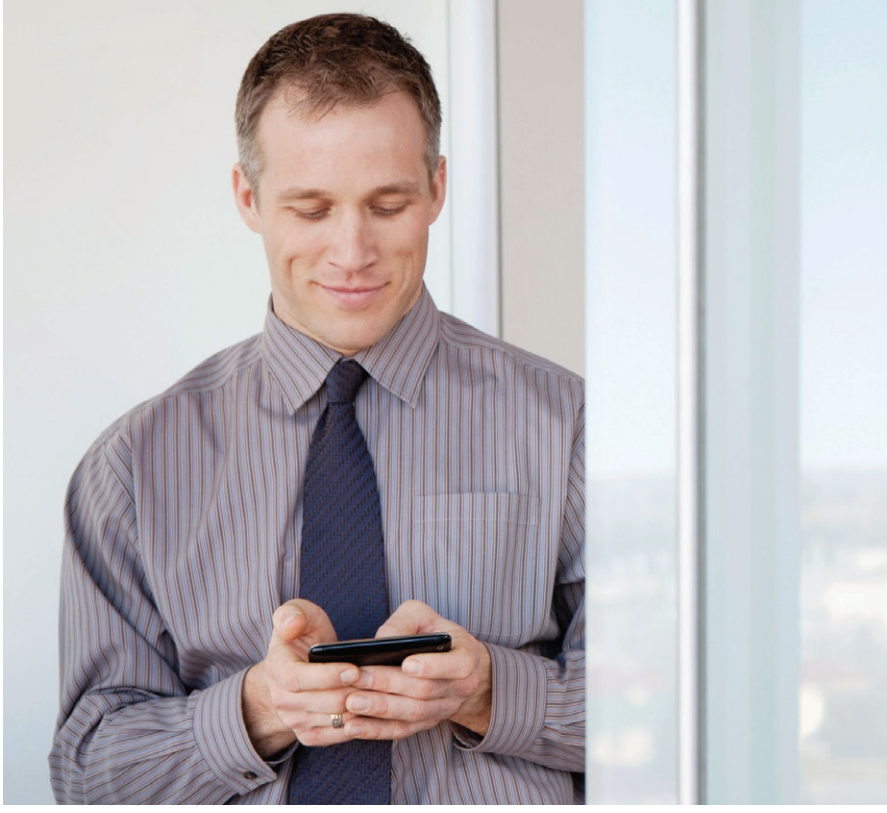
You're probably already familiar with many basic Excel keyboard shortcuts, especially when you take your laptop on the road and don't want to use the mouse. However, there are some little-known shortcuts that can help you work even more efficiently in selecting ranges and moving around a worksheet.

For example, you can quickly select an entire data region (a range of data cells bordered by empty cells) by holding down CTRL-SHIFT-* (asterisk). Another way to select a data range is to place your cell pointer in the range and then press CTRL-A; press CTRL-A a second time to select the entire worksheet. You can also press CTRL-Spacebar to select the column where your cell pointer is located.

Another helpful keyboard shortcut is to press END followed by an Up, Down, Left, or Right arrow key to efficiently move the cell pointer to the outermost edge of a data range.

What should you do when your smartphone decides to play dead?

Resist the urge to throw it against the nearest wall and try one of these techniques instead.



Revive A Dead Smartphone

SOFT RESET

All phones have a soft reset function, which is similar to restarting your computer. Beware that performing a soft reset will cause you to lose any data that isn't saved, but you will retain information previously stored on your smartphone.

➤ **Motorola Backflip.** Power the phone off. Remove and reinsert the battery, then power the phone back on.

➤ **Android (Other).** All remaining Android models use a simple power cycle to perform a soft reset. Just turn the phone off and then back on again.

➤ **BlackBerry (QWERTY keyboard).** Press and hold the ALT-CAP-DEL key combination. The display goes black for a second and your BlackBerry resets.

➤ **BlackBerry (SureType keyboard).** Press the ALT-CAP and Right Shift-DEL keys. When the screen goes blank, release the keys.

➤ **BlackBerry (touchscreen).** Turn the BlackBerry off and remove the battery for at least 30 seconds. Reinstall the battery and turn the device back on.

➤ **iPhone (all models).** Press and hold the Sleep/Wake button and the Home button. Hold both buttons until the screen goes blank. The white Apple logo appears as the iPhone reboots.

➤ **Nokia (all models).** Power the phone off and remove the battery for 30 seconds. Reinstall the battery and power the phone on. Alternately, you can enter the code *#7380# and select Yes.

➤ **Palm Pre.** If the phone's menus are active, select Device Info, Reset Options, then select Soft Reset. If it is locked or frozen, hold the power button and cycle the ringer button on and off three times. If that doesn't work, press and hold the Orange, Sym, and R keys until the device reboots. Turn the phone off, remove the battery for 10 seconds, reinstall the battery, and power the phone up.

➤ **All other smartphones.** You can generally perform a soft reset by powering the phone off, removing the battery for 30 seconds, and powering the phone back on.

HARD RESET

A hard reset is a last-ditch option that returns your phone to its factory settings, which means you will lose all data and installed applications. Before you perform a hard reset, remove the memory card from your phone; that way you can recover data from the card later.

➤ **AT&T TerreStar GENUS.** With the device turned off, press the red power key. When the TerreStar logo appears, press and hold the E-Power keys until a green checkmark appears in the lower-left corner. Release all keys. The device will power up and perform a factory reset.

➤ **Android (all models with functioning menu systems).** One of the following menu-based systems for performing a hard reset should work, depending on the phone and version of Android. Open the application menu. Tap Settings, SD and Card Storage, Factory Data Reset, and follow the on-screen instructions.

- From the Home screen, tap Menu, Settings, Privacy, and Factory Data Reset, and then follow the on-screen instructions.
- From the Home screen, tap Menu, Settings, Security, and Factory Data Reset, and then follow the on-screen instructions.

When the menu system isn't functional, follow these phone-specific options to perform a hard reset.

➤ **Dell Venue.** With the device turned off, press and hold the Volume Up and Volume Down buttons. Without releasing the buttons, press and hold the Power button. When the device configuration screen appears, release all buttons. Use the Volume Up or Down button to move to Factory Reset. Press the Camera button to select the Factory Reset option and start the reset process.

➤ **Google Nexus One, Nexus S.** Turn the phone off. Press and hold Volume Down while you press and release the Power button. Use the Volume Down button to select Clear Storage from the list of options. Press the Power button, and confirm your selection by pressing the Volume Up button.

➤ **T-Mobile Comet.** If possible, back up your data to Google's servers by selecting Privacy from the Settings screen. Select the Back Up My Data option. When the backup is complete, return to the Settings screen and select Privacy and Factory Data Reset. When prompted, tap Reset Phone, then tap Erase Everything.

➤ **T-Mobile G2x.** If possible, back up your data to Google's servers by selecting Privacy from the Settings screen. Select the Back Up My Data option. When the backup is complete, power off the phone. Press and hold the Power/Lock-Volume Down keys for at least 15 seconds. The phone should turn back on and perform a factory reset. If the screen is frozen, or the phone doesn't turn back on, remove the battery, wait 30 seconds, then reinstall the battery and try again.

➤ **Motorola Droid.** Turn the phone off. Press and hold the Power-X keys to force the phone into recovery mode. Next, press and hold the Volume Up-Camera key, select Wipe Data/Factory Reset, and then select Reboot Phone.

➤ **Motorola Droid Pro, Droid 2 Global.** Select Settings, Privacy, and Factory Data Reset. When prompted, tap Reset Phone to erase all data and return the phone to factory conditions.

➤ **Motorola Backflip.** Power the phone off. Press and hold the Power and Camera buttons. When the phone turns on, release the Power button but continue to hold the camera button until prompted to release it. Next, press the Volume Down button. After 15 seconds, a yellow triangle with an exclamation point will appear. With your phone closed, tap the bottom-right corner of the display and select Wipe Data/Factory Reset. Press OK and follow the on-screen instructions.

➤ **BlackBerry (all models).** Remove the battery for 30 seconds. Reinstall the battery and turn the phone back on.

➤ **BlackBerry Style, Bold, Storm, Curve, Tour, Torch.** Click the Options icon on the Home screen. Select Security and then Security Wipe. Select all three of the available checkboxes to perform a complete wipe and reset the device to factory condition. Type the word BlackBerry and click Wipe.

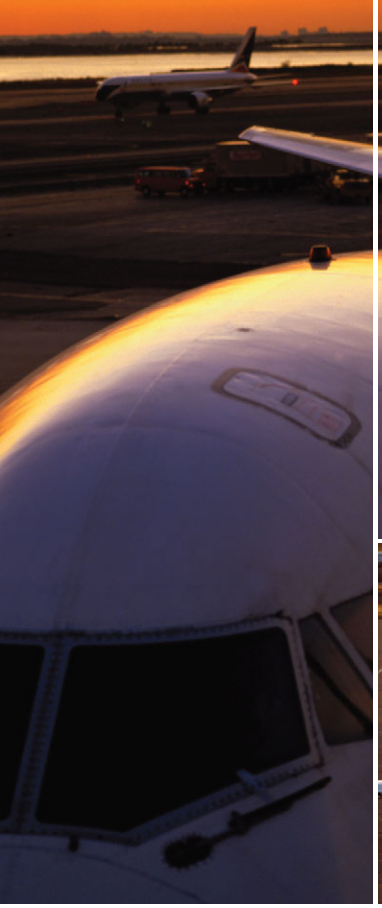
➤ **HTC Arrive, HD7, Surround.** Press Start and tap the right-facing arrow. Tap Settings, About, and then tap Reset Your Phone. Tap Yes, and then tap Yes again. If the screen is frozen, turn the device off. Press and hold the Volume Up-Down buttons and briefly press the Power key. When the screen dis-plays instructions for resetting the device, release the Volume Up-Down buttons.

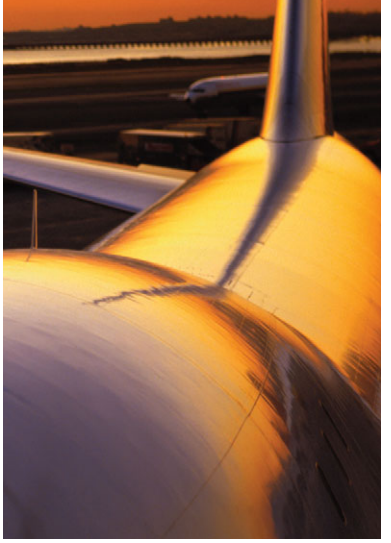
➤ **iPhone (all models).** From the Home screen, tap Settings, General, Reset, and Reset All Settings. This action resets all preferences but retains applications and data. If that doesn't work, from the Home screen, tap Settings, General, Reset, Erase All Content, and Settings. This will delete all data and applications and return the iPhone to factory conditions.

➤ **Nokia (all models).** With your phone powered on or in standby mode, type *#7370# and select Yes, when prompted. You may need your Lock Code for confirmation. The default lock code is 12345. If your phone doesn't turn on, try pressing the On/Off button, *, and 3 simultaneously.

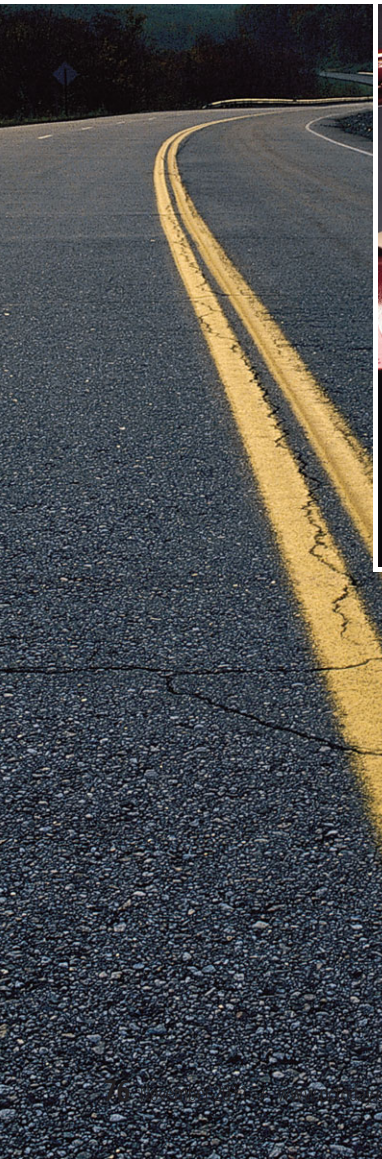
➤ **Microsoft Windows Phone 7 (all models).** Press Start and tap the right-facing arrow. Tap Settings, About, and Reset Your Phone. Tap Yes, and then tap Yes again.

➤ **Palm Pre.** Open Device Info, tap Phone Reset Options, and then tap Full Erase twice. If your Palm Pre is frozen, and you are unable to use the menus to perform a reset, try running the latest version of webOS Doctor (ws.palm.com/webosdoctor/sorry.htm) to troubleshoot and reset the device. Then follow the on-screen instructions.











The Traveler's 911 Directory

AIRLINES

➤Air Canada
www.aircanada.com
mobile.aircanada.ca
Information and reservations
(888) 247-2262
Baggage information
(888) 689-2247

➤American Airlines
www.aa.com; mobile.aa.com
Reservations (800) 433-7300
TDD (800) 543-1586
Flight information
(800) 223-5436
Baggage delayed less than five days (800) 535-5225
Ticket refund requests
(918) 254-3777

➤British Airways
www.britishairways.com
ba2go.com (mobile)
Information and reservations
(800) 247-9297

➤Continental Airlines
www.continental.com
pda.continental.com
Reservations to U.S. and Mexico destinations (800) 523-3273
Reservations to international destinations (800) 231-0856
TDD (800) 343-9195
Flight information
(800) 784-4444
Baggage information
(800) 335-2247
OnePass frequent flyer assistance (713) 952-1630

➤Delta Air Lines
www.delta.com
mobile.delta.com
Reservations
(800) 221-1212
Flight information
(800) 325-1999
Baggage information
(800) 325-8224
SkyMiles members
(800) 323-2323

➤Frontier Airlines
www.frontierairlines.com
Reservations (800) 432-1359
Customer relations
(800) 265-5505

➤JetBlue Airways
www.jetblue.com
mobile.jetblue.com
(800) 538-2583

➤Lufthansa
www.lufthansa.com
mobile.lufthansa.com
Information and reservations
(800) 399-5838

➤Southwest Airlines
www.southwest.com
mobile.southwest.com
(800) 435-9792
TDD (800) 533-1305

➤Spirit Airlines
www.spiritair.com
(800) 772-7117

➤United Airlines
www.united.com
www.ua2go.com (mobile)
Reservations (800) 864-8331
International reservations
(800) 538-2929
TDD (800) 323-0170

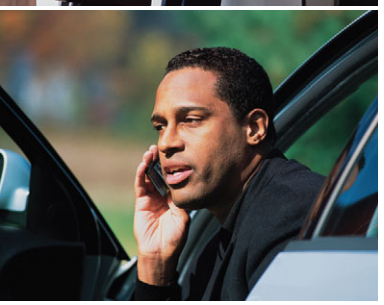
➤US Airways
www.usairways.com
Reservations to U.S. and Canada destinations (800) 428-4322
Reservations to international destinations (800) 622-1015
TDD (800) 245-2966
Customer service
(800) 943-5436

VEHICLE RENTALS

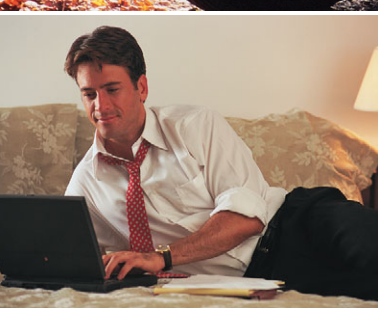
➤Advantage Rent A Car
www.advantage.com
Reservations (866) 661-2722 or (210) 344-4712 outside the U.S.
Customer service
(800) 777-5524

➤Alamo Rent A Car
www.alamo.com











(800) 462-5266
TDD (800) 522-9292

➤**Avis**
www.avis.com
mobile.avis.com
Reservations (800) 331-1212
TDD (800) 331-2323
Customer service
(800) 352-7900

➤**Budget Rent A Car System**
www.budget.com
mobile.budget.com
Reservations in the U.S.
(800) 527-0700
Reservations outside the U.S.
(800) 472-3325
TDD (800) 826-5510
Roadside assistance
(800) 354-2847
Customer service
(800) 214-6094

➤**Dollar Rent A Car**
www.dollar.com
Reservations (800) 800-3665
Reservations outside the U.S.
(800) 800-6000
TDD (800) 232-3301
24-hour roadside assistance
(800) 235-9393

➤**Enterprise Rent-A-Car**
www.enterprise.com
Reservations (800) 261-7331
TDD (866) 534-9270

➤**Hertz**
www.hertz.com
hertz.mobi
Reservations (800) 654-3131
Reservations outside the U.S.
(800) 654-3001
TDD (800) 654-2280
Extend rental (800) 654-4174
Billing information
(800) 654-4173
Customer relations
(888) 777-6095

➤**National Car Rental**
www.nationalcar.com
(800) 227-7368
TDD (800) 328-6323

➤**Payless Car Rental**
www.paylesscarrental.com
(800) 729-5377

➤**Thrifty Car Rental**
www.thrifty.com
Reservations (800) 847-4389
Emergency (877) 283-0898

TRAVEL SERVICES

➤**AAA**
www.aaa.com
aaa.mobi
Roadside assistance
(800) 222-4357

➤**Expedia**
www.expedia.com
(800) 397-3342

➤**Hotwire**
www.hotwire.com
(866) 468-9473
OCS (Overseas Citizens Services) traveler's hotline
(202) 647-5225 or
(888) 407-4747
After-hours emergencies
(202) 647-4000

➤**Orbitz**
www.orbitz.com
mobile.orbitz.com
(888) 656-4546

➤**Priceline**
www.priceline.com
priceline.mobi
(800) 774-2354

➤**Travelocity**
www.travelocity.com
mobile.travelocity.com
(888) 872-8356

HOTELS

➤**Candlewood Suites**
www.candlewoodsuites.com
mobile.candlewoodsuites.com
(888) 226-3539

➤**Chase Suite Hotels**
www.woodfinsuitehotels.com
(800) 966-3346

➤**Choice Hotels International**
(Cambria Suites, Comfort Inn, Comfort Suites, Quality Inn, Sleep Inn, Clarion, MainStay Suites, Suburban Extended Stay Hotel, Econo Lodge, and Rodeway Inn)
www.choicehotels.com
(877) 424-6423

➤**Courtyard Hotels**
www.courtyard.com
courtyard.mobi
(888) 236-2427

➤**Crowne Plaza Hotels & Resorts**
www.crowneplaza.com
mobile.crowneplaza.com
(877) 227-6963

➤**Doubletree Hotels**
www.doubletree.com
doubletree.mobi
(800) 222-8733

➤**Embassy Suites Hotels**
www.embassysuites.com
embassysuites.mobi
(800) 362-2779

➤**Four Seasons Hotels & Resorts**
www.fourseasons.com
mobile.fourseasons.com
(800) 819-5053

➤**Hampton Inn Hotels & Suites**
www.hamptoninn.com
hamptoninn.mobi
(800) 426-7866

➤**Hawthorn Suites**
www.hawthorn.com
(800) 527-1133

➤**Hilton Hotels**
www.hilton.com
hilton.mobi
(800) 445-8667

➤**Holiday Inn**
www.holidayinn.com
mobile.holidayinn.com
(888) 465-4329

➤**Holiday Inn Express**
www.hiexpress.com
mobile.hiexpress.com
(888) 465-4329

➤**Homewood Suites**
www.homewoodsuites.com
homewoodsuites.mobi
(800) 225-5466

➤**Hyatt Hotels & Resorts**
www.hyatt.com
(888) 591-1234
TDD (800) 228-9548
Hyatt Place (888) 492-8847
Hyatt Summerfield Suites
(866) 974-9288

➤**Marriott**
www.marriott.com
marriott.mobi
(888) 236-2427

➤**Park Plaza**
www.parkplaza.com
(800) 777-1700

➤**Radisson Hotels & Resorts**
www.radisson.com
(888) 201-1718

➤**Ramada Worldwide**
www.ramada.com
(800) 272-6232

➤**Renaissance Hotels & Resorts**
www.renaissancehotel.com
(888) 236-2427

➤**Residence Inn**
www.residenceinn.com
residenceinn.mobi
(888) 236-2427

➤**Ritz-Carlton Hotels & Resorts**
www.ritzcarlton.com
(800) 542-8680

➤**Sheraton Hotels & Resorts**
www.sheraton.com
(800) 325-3535

➤**Staybridge Suites**
www.staybridge.com
mobile.staybridge.com
(877) 238-8889

➤**Westin Hotels & Resorts**
www.westin.com
(800) 937-8461

➤**Wingate Inns**
www.wingateinns.com
(800) 228-1000

➤**Woodfin Suite Hotels**
www.woodfinsuitehotels.com
(800) 966-3346

➤**Wyndham Hotels & Resorts**
www.wyndham.com
(877) 999-3223

Happy Trails

Intriguing Gear, New & Around The Bend

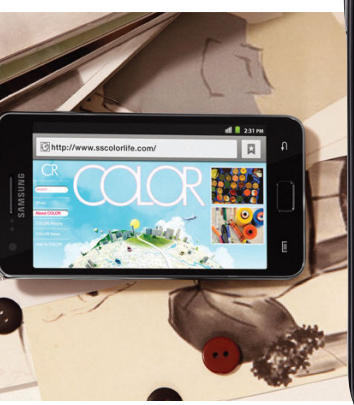




➤ SAMSUNG'S DUAL-THREAT ENTERTAINMENT & BUSINESS SMARTPHONE

Samsung's Galaxy S II walks the line between entertainment and business by providing features specifically designed for both aspects of your life. The smarpthone sports a 4.3-inch Super AMOLED Plus display that Samsung built to showcase the phone's vivid colors and responsiveness. The Galaxy S II features a dual-core processor, Android 2.3 (aka Gingerbread), and 16GB or 32GB of storage with a microSD slot that supports a card up to 32GB. It also has 8MP back-facing and 2MP front-facing cameras.

As promised, Samsung's Galaxy S II has business features that let you stay connected while keeping your phone's data secure. The smartphone supports Microsoft Exchange ActiveSync, so you can access your company's Exchange server. It also features VPN access and meeting apps to keep up with your employees or co-workers. And Samsung has included hardware-based encryption for secure storage and data transfers.









➤ A POWERFUL ANDROID TABLET FROM ARCHOS

Archos is most commonly known as an MP3 and media player manufacturer, but the company is now entering the tablet arena with its 80 G9. This Android 3.2 (aka Honeycomb) tablet has a dual-core processor, Wi-Fi and Bluetooth connectivity, and multiple storage options. It has an 8-inch touchscreen, a 720p front-facing camera, and displays videos in full 1080p HD. It also has an HDMI output for connecting to HDTVs.

The tablet supports Adobe Flash 10.3 for improved Web surfing and Flash-based applications. And there are multiple pre-installed apps, including Google's suite of Gmail, YouTube, Maps, and many more. The Archos 80 G9 is available in an 8GB Classic model for $299.99 as well as two separate Turbo models which have 16GB or 250GB of storage and cost $329.99 and $369.99, respectively.

MOBILE EDGE
Bring It On.

SATISFACTION 100% GUARANTEED

LIFETIME WARRANTY

Business Class

amazon.com

eBags

DELL

Fry's ELECTRONICS




Multiple Interior Pockets for Storage and Organization


Durable yet stylish 1680 Nylon Exterior


Full-size Rear Pocket for Files, Magazines or Tickets

Introducing the 'Metro' nylon laptop cases from Mobile Edge!

The 'Metro' Nylon Briefcases are the perfect cases for the professional with a sense of style.

These sleek and lightweight laptop cases are built with a rugged 1680D Ballistic Nylon exterior. Stylish contrast stitching and polished nickel fittings enhance the elegant design. In addition to the padded computer pocket, there are two full-size interior compartments for your work papers, legal-size file folders and travel accessories. An easy-access workstation features elastic pockets for your cell phone, iPod, media cards, flash drives, plane tickets, pens plus a full-length secure mesh pocket for travel receipts or other miscellaneous items. Other features include leather-wrapped carry handles, a removable & adjustable shoulder strap, key fob, heavy-duty steel fittings, a full-size exterior magazine pocket and a convenient trolley strap.

Style, function and durability in one compact package! The 'Metro' Laptop Cases, from Mobile Edge!

www.mobileedge.com/PCToday

©2011 Mobile Edge, Inc.
All trademarks and registered trademarks are the property of their respective owners.
All rights reserved.

Lenovo recommends Windows® 7.

intel inside CORE i5

THE DO INSIDE

DO MORE THAN TURN HEADS. DROP JAWS.



IdeaPad® U400 available at BEST BUY®

INTRODUCING THE LENOVO® IDEAPAD® U400 NOTEBOOK.

Smart-looking on the outside. Smartly engineered inside. The new IdeaPad® U400 is ultraportable and yet uncompromised, with performance powered by visibly smart 2nd gen Intel® Core™ processors along with an integrated DVD drive. Minimalist, book-shaped design includes a durable, one-piece aluminum shell, cool-touch palmrest and unique Breathable Keyboard allowing air to enter through the keys, so the PC can run cooler. You're bound to drop jaws on the catwalk or in the boardroom.

THE NEW IDEAPAD® U400 NOTEBOOK – AT SELECT BEST BUY STORES OR AT BESTBUY.COM/LENOVO.

INTEL WIDI

LENOVO BREATHABLE KEYBOARD

lenovo® FOR THOSE WHO DO.™

Best Buy and BestBuy.com are trademarks of BBY Solutions, Inc. Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and other countries. The following are registered trademarks of Lenovo: Lenovo, the Lenovo logo, For Those Who Do logo and IdeaPad. Intel, the Intel Logo, Intel Inside, Intel Core, and Core Inside are trademarks of Intel Corporation in the U.S.and other countries. Other company, product and service names may be trademarks or service marks of others. ©2011 Lenovo. All rights reserved.